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A QUARTERLY JOURNAL, DEVOTED TO  
THE ADVANCEMENT OF THE  
DENTAL PROFESSION.

CONDUCTED BY  
THEO. G. LEWIS, D. D. S.

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# THE DENTAL ADVERTISER.

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## SENSITIVE DENTINE.

BY J. B. WILLMOTT, L. D. S., D. D. S., M. D. S.,

Professor of Operative Dentistry, Royal College of Dental Surgeons of Ontario.\*

The subject which I have chosen, for what I fear will prove a somewhat incomplete paper, is by no means novel, but is, nevertheless, interesting to both operator and patient. So long as a large proportion of our patrons approach our rooms with feelings akin to those experienced by the victims of the inquisition in bygone ages, we, as practitioners, will be interested in the discussion of Sensitive Dentine. On this subject so much has been said and written that I cannot hope, at best, to do more than present known facts in a somewhat new aspect, and to make some deductions, which may possibly suggest a method of combating the difficulty, more intelligent, perhaps more scientific, than some which have been in use.

Though all are agreed that human dentine is endowed with the function of sensation, there is no general agreement as to the minutia of the process by which a sense of injury is conveyed to the brain so that we may take cognizance of it.

The theory elaborated by Dr. Black, in "American Dentistry," is reasonable and accounts for the phenomena observed. In his view, experiment has demonstrated that protoplasmic cells are sensitive, and manifest their sensibility in response to contact with stimulants both chemical and mechanical. The tubules of the dentine are occupied by

\* Read before the Seventh and Eighth District Dental Societies, Buffalo, N. Y., October, 1887.

projections from the protoplasmic odontoblast. The central end of the elongated odontoblast is in close association with the fine nerve filaments in the periphery of the pulp.

A fair assumption from these facts seems to be that the sense of injury experienced by the free extremity of the odontoblast is communicated to the nerve filaments, with which its central extremity is associated, and by these transmitted to the brain.

Whatever may be the precise *modus operandi* by which it is effected, it would seem perfectly clear, from the anatomical structure of dentine, that sensation is conveyed through, or by, the contents of the tubules, and that sensation in dentine is confined to these contents.

Though all dentine is more or less sensitive, there is a vast difference in the normal sensibility of the teeth in different individuals.

This variation is dependent on age, temperament, sex, quality of tooth tissue, and other causes, and is so great that what would be hyperæsthesia in one patient would not reach the standard of normal sensibility in another.

Ordinarily, in the discussion of the treatment of this painful condition, this fact has been overlooked. Methods of treatment which, in cases of exalted sensibility, as a pathological condition, have been entirely satisfactory, have, in apparently similar cases, proved useless and disappointing, because the condition was normal and not pathological.

Up to comparatively recent years the commonly accepted cause of hyperæsthesia of the dentine seems to have been inflammation. This theory is defended at considerable length by Dr. Taft. In the light of our present knowledge of the minute structure of dentine, as revealed by the microscope, his argument cannot be considered very conclusive. Nor has any treatment, scientifically based on the inflammatory theory, ever produced satisfactory results. Another, and more plausible suggestion, was that the dental pulp was really the seat of the exalted sensibility, and that the contents of the tubules were merely the passive instruments or agents to transmit the external impression to this central organ. Rational treatment based on this hypothesis would be the administration of such therapeutic agents as, acting on the nervous or circulatory systems, or both, should lower this exalted sensibility. The observed result of the use of nervous or arterial sedatives for this purpose has not tended to confirm the correctness of the theory.

Dr. Louis Jack has discussed the subject in the second volume of *American Dentistry* and concludes that "it may be considered clearly established that dentinal sensibility is attributable to the state of the tubular contents, and that it is excited into extreme manifestation by some physical irritation of the fibrillæ." The doctor has only considered this sensitiveness as associated with dental caries, and attributes the physical irritation

to the disintegrating process by which caries are developed. It is well known, however, that this condition is not confined to teeth affected by caries, and, consequently, is not always occasioned by the disintegration of dentine.

My own opinion, formed after considerable observation and study of the phenomena exhibited, and now expressed, not dogmatically but tentatively, is, that hypersensitive dentine as a pathological condition is analogous to the familiar condition known as "teeth on edge" and is produced by the same general cause, the irritation of an acid.

In a severe case of "teeth on edge," from eating sour fruit, the irritating acid is concentrated and abundant. It passes through the pores of the enamel, which is itself devoid of sensation, and acting on the peripheral extremities of the fibrillæ, causes such irritability in this tissue that the slightest impact on the external surface of the tooth, or any material elevation or depression of temperature, causes extreme discomfort. In the hyperæsthesia ordinarily observed in dental practice, in association with caries, the irritating acid is dilute and not in large quantity, so that the effect is produced slowly and requires for its manifestation greater variations of temperature, the contact of such irritating agents as sugar or salt, or some injury to the locality affected, as the cut of an excavator. The difference of the two conditions is one of degree only. In the former, the irritant being applied for a short time only, and soon becoming so diluted by the saliva as to become inert, the exalted sensibility rapidly subsides. In the latter, the irritation is persistent and the hyperæsthesia becomes chronic.

We are occasionally asked to prescribe for patients whose teeth have become so excessively sensitive that the slightest variations of temperature produce acute suffering, requiring that both food and drink be taken warm. We are frequently called upon to treat cases where the necks of the teeth have become acutely sensitive to the touch of the tooth brush or other hard substance, and are especially so to contact with such chemical agents as sugar or salt or strong acids.

The first we assume to be due to an acid condition of the system generally, or a markedly vitiated state of the oral fluids; the last to be due to the acid secretions of the sub-mucous glands, probably associated with an acid condition of the saliva. If our theory be correct, antacid treatment, systemic or local, or both, should be effectual. In practice we find that the former condition, when not associated with other serious constitutional disturbance, will yield promptly to Potassium Bicarb. in ten-grain doses three or four times daily. The latter is effectually relieved by the free use of precipitated or prepared chalk, rubbed into the interstices of the teeth and pasted around their necks on retiring at night, or by frequent rinsing of the mouth with lime water.

It is, however, with the treatment of sensitive dentine in caries that the dentist is principally concerned.

If we diagnose this as a pathological condition, the indications will be to gently remove as much of the debris as may be done without severe pain, neutralize any free acid with a drop of liquor ammonia, and fill temporarily with zinc phosphate, thus shutting out the irritant and permitting the exalted sensibility to subside.

If the sensitiveness, extreme though it be, is the normal condition of the tooth, temporary filling for a month, or for a year, could not be expected to afford any relief. The fact that the average dentist is able to discriminate with a good degree of certainty between the normal and the pathological, does not bring him much comfort. What he wants is some easily available treatment that shall promptly control either or both. For this purpose the whole materia medica has been ransacked, and on one theory or another, or on no particular theory but at hap-hazard, a large proportion of the therapeutic agents known to science have at some time been recommended and tried with such indifferent success that there is still an anxious inquiry from our patients for some relief from the tortures of dental operations.

A great deal may be accomplished by gaining the confidence of the patients—by stimulating their courage—by tact and gentleness of manner and touch, by the use only of suitable and sharp instruments, skillfully and intelligently used; but even so, there is still very much to be desired. Surely science or common sense can suggest some means to this end. Referring again to the structure of living dentine, we find the tubules occupied by fibrillæ, ready instantly to communicate the fact of any injury to their extremity. If it were possible to cause these fibrillæ to draw themselves back into the tubules so that there should be a free, unoccupied portion of the tubule which could be cut off without injury to the retracted occupant, it would seem that we had accomplished our desire. Probably not entirely; as there would still remain that part of the pain due to vibration caused by the force necessarily employed in cutting dentine, this would be slight. Is it possible to secure this retraction? Agents which stimulate contraction are at once suggested. Contraction of living tissue is, however, not a condensation of bulk but merely a change of form. As the tubules are already full and the walls are unyielding, change of form so as to produce contraction is not possible. A large percentage of the contents of the tubules is water; if a portion of this could be removed, until it could be replaced again from the central source of supply, the cell would shrink from its free end towards its central attachment.

This is doubtless what occurs when a carious tooth has been isolated and protected by the rubber dam and the free moisture in the cavity



absorbed ; the natural heat of the tooth slowly evaporates the water, the fibrillæ retract and the surface can be removed with less pain than when it was moist. Here, it seems to me, we have suggested to us *dehydration* as the true secret of promptly obtunding sensitive dentine whether it be normal or pathological.

There are two principal methods by which this may be accomplished : by evaporation, and by the use of agents which have a marked affinity for water. To succeed by either method it is essential to protect the cavity from moisture, not only when the dehydration is being accomplished, but until the excavation is completed. With the advent of moisture we soon have a return of sensation and that exalted by the irritation of the previous dehydration. If we purpose to dehydrate by evaporation, a good plan will be to protect the cavity, thoroughly absorb the free moisture, remove the loose debris, then saturate the cavity with absolute alcohol, and, in a minute or two, absorb it and apply a jet of warm air by one of the appliances for that purpose. In this way the water is evaporated and the fibrillæ retracted to a greater depth than by using the warm air alone. Of the available agents having a strong affinity for water, zinc chloride has long been used as an obtunder, the effect being generally ascribed to its escharotic property. The fact that the sensation returns after a brief period would seem to contradict this theory. It is more probable that its virtue is largely due to its activity as a dehydrator. If this view be correct, Dr. Jack's direction to carefully and thoroughly wash out of the cavity the dissolved zinc chloride, would appear to be a mistake. The best results will be obtained by protecting and thoroughly drying the cavity, removing the loose debris, then introducing the zinc chloride in crystals, forcing them against the walls of the cavity. When the pain has subsided, absorb the now fluid zinc chloride and carefully exclude moisture until the cavity is prepared. Whatever agent is used the same general procedure is indicated.

A preparation consisting of equal parts by weight of absolute alcohol, anhydrous glycerine and tannic acid has been used with good success, though it is doubtful if the astringent adds anything to its virtue, that depending on its dehydrating property.

What is known as Herbst's obtunder, whether so designed or not, is evidently a combination of a dehydrator, sulphuric acid, with an anæsthetic, cocaine, with a view, doubtless, to lessening the pain of the application. Having had no experience with this remedy I cannot speak from observation as to its success. As its efficiency would seem to depend on the presence of an amount of free sulphuric acid, danger to the integrity of the tooth tissue might reasonably be apprehended. What is known as Robinson's remedy—carbolate of potassium—when properly prepared is a really efficient agent. Dr. Robinson's directions

were to rub together equal parts of carbolic acid in crystals and potassium hydrate. This, however, results in a powdery mass very inconvenient for use. The addition of about fifteen minims of anhydrous glycerine to each dram makes a friable solid mass which can be readily applied to the cavity. That which is sold in liquid form, however valuable in the treatment of pyorrhœa alveolaris, is not the best form for use as an obtunder of sensitive dentine. In the use of this agent the same precautions are necessary in the exclusion of moisture as have already been referred to in the use of zinc chloride.

In comparison with zinc chloride the pain of application is less severe and not so long continued. My own experience would suggest that it improves with age; the chemical combination of its constituents probably requiring a considerable time to perfect. A suggestion as to the possibly far-reaching action of zinc chloride may be obtained by placing a drop of a strong solution in a considerable portion of white of egg. In the course of a few hours the coagulated mass will have extended to the diameter of probably an inch. A fragment of carbolate of potassium of similar size will, under similar circumstances, have converted a considerable portion of the albumen into a firm transparent jelly, possibly due to the abstraction of its water. Which agent is most dangerous to the integrity of the fibrillæ I am not prepared to say, but have a strong suspicion the former.

There are a number of other agents, such as dry chloride of lime, potassium carbonate, etc., which have an affinity for water, and might doubtless be used with some success. There are none, however, all things considered, equal to those already named.

Arsenious acid, for obtunding purposes, has been proven to be so dangerous to the vitality of the dental pulps, that it has ceased to be used for this purpose, and need not be here discussed.

To sum up—the points I have endeavored to make are :

1st. Excessively sensitive dentine may be either a normal or a pathological condition.

2d. As a pathological condition it is due to acid irritation.

3d. This irritation may be local and confined to the walls of the carious cavity, or it may be systemic and affect teeth otherwise healthy.

4th. This pathological condition from systemic causes may be effectually treated by antacids, and when from local causes, by the neutralizing of the debris in the cavity and temporary exclusion of the irritating agent.

5th. That exalted sensibility of dentine, whether normal or pathological, may be successfully combated by intelligent dehydration.

6th. The treatment to be effectual must include the entire exclusion of moisture until the cavity is prepared.

7th. That the dehydrators with which I am familiar may be placed in the order of their utility as follows, viz. :

- (a) Absolute alcohol and warm air combined.
- (b) Robinson's remedy.
- (c) Zinc chloride in crystals.
- (d) Alcohol, glycerine and tannin.

## CARELESSNESS IN MANAGEMENT OF DENTAL VULCANIZERS.

BY GEORGE B. SNOW, D. D. S.

There are shown herewith illustrations of parts of the remains of two vulcanizers, which illustrate the consequences of careless management in such a graphic manner that they are well worth a few moments' attention.

In both cases, the vulcanizer was a No. 2 Hayes Boiler. One was forgotten, and allowed to attain a temperature so high as to cause bulging of the pot. In Fig. 1 it will be observed that it is stretched almost out of semblance to its original form, and it is noticeable also that the place where the sides have yielded the most to the internal pressure is not half way between the ring and the bottom, but quite near the ring—only about an inch from it.

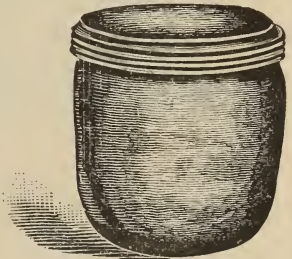


FIG. 1.

This vulcanizer was strained nearly to its capacity of resistance. It probably sustained a pressure of nearly five hundred pounds to the square inch, possibly even more. The symmetrical manner in which its shape has changed speaks well for the uniform strength and toughness of the copper used in its construction.

The second specimen passed the danger point, and burst. The tenacity of the copper was in this case also so uniform that the pot only yielded to a pressure so great that, once a rupture was begun, the pot was torn into fragments; and these tell their own story.

On looking at the engraving, Fig. 2, a small point of the copper will be noticed at the front, projecting from the ring. Just below this point, and at the place of greatest yielding, which, as shown by the first example, was about an inch from the ring, the initial rupture took place. This was not in the brazed seam, but a short distance from it. The opening was vertical, passing upwards to near the ring, when a division of the

rent occurred, leaving the little point of copper which is seen at the front. The sides of the pot were torn in two, and when the rent reached the ring the internal pressure was so great as to shear off the copper against the edge of the ring as cleanly as though it had been cut. The longitudinal strain finally directed the rents diagonally downwards on either side, so that they met at a point near the bottom, leaving attached to the pot the pointed piece seen at the rear. The other end of the initial rupture ran downwards to near the juncture

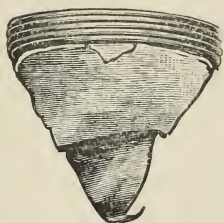


FIG. 2.

of the sides and bottom, and then divided; running around the bottom, and meeting at or near the point of the copper seen at the rear (Fig. 2). The fragments were wholly separated, and consisted of the ring, two sides, one only of which is illustrated (Fig. 3), and the bottom, Fig. 4. The latter, being torn loose as described, was thrown downwards with such force that it struck something, probably a portion of the heating apparatus, by which a hole was punched through it.

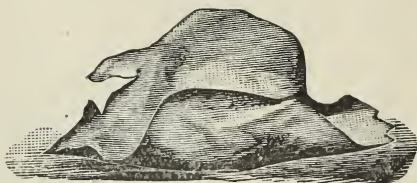


FIG. 3.



FIG. 4.

The strain upon the pot from the excessive pressure was so great that, once the rupture was begun, it ran the course above described almost instantly; so quickly, in fact, that the opening of the sides of the pot failed to relieve the pressure in time to stop the rupture in its course. The two cases taken together give an instructive lesson, and a very forcible commentary on the folly of carelessness or forgetfulness in the management of vulcanizers. Many dentists fail to realize the significance of the fact that steam pressure is doubled by an increase of about fifty degrees in temperature, and use their vulcanizers with the thermometers or the safety apparatus out of order, without a thought of the danger they incur. Leaving out of consideration the damage which may be done to the rubber, by overheating, danger to life and property is imminent if the vulcanizer is not properly attended to.

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DR. LAURENCE TURNBULL, of Philadelphia, is about to issue a new and revised edition of his popular Manual of Anæsthetics. We have received advance sheets of new matter on Hydrochlorate of Cocaine, which is treated in Dr. Turnbull's usually exhaustive manner.



## IMMEDIATE ROOT-FILLING.

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BY DR. FRANK W. LOW, BUFFALO, N. Y.

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That it is good practice to treat and fill putrescent pulp canals at one sitting, from the older practitioners of dentistry we hear many emphatic demurs.

A careful consideration of the scientific principles upon which this procedure is based, must in the opinion of the writer set these aside, and but that statistics are said to prove nothing, the evidence to the correctness of this manner of treatment even in the comparatively short time since its first inauguration, is abundant and very conclusive. The first question, then, to be settled in the discussion of this subject should be, what are the conditions obtaining? after which it is more easily agreed upon as to what is the most rational treatment.

Beginning at the centre of the seat of lesion it has been the experience of the writer to find the pulp canal partially filled with decomposing vegetable and animal products, presumably highly infected with the various cultures of bacteria. The dentinal tubuli ramifying outward from its walls as they do in every direction throughout the entire body of the dentine, though too minute to admit of disintegrated particles of food, must share to a great extent in the putrescent condition of the pulp canal itself; but the cementum of the tooth, so long as its source of nutrient supply—the pericemental membrane—continues to exist (though in however highly an inflamed condition it may be), seems to be endowed with remarkable powers of resistance to all encroachments from within, and when finally attacked, the etiology of its disease more closely resembles necrosis of bone than caries of dentine, and if involved to any considerable extent the tooth had better not be filled at all, “the game not being worth the candle.”

The pathological condition of the pericemental membrane resulting from putrescence, varies from the merely slight, sub-acute form of inflammation, existing only in isolated patches about the apex of single and most often extending up the inner sides to the bifurcation of double roots, to a highly acute form involving nearly the entire pericementum, and causing intense suffering; but in either event its recuperative energy is so great, that the cause of irritation having been abated, it will almost invariably resume its normally healthy condition in a very short time. Should surgical assistance be needed it must come through incision of the overlying connective gum tissue and cancellous alveola, effected either with the scalpel or by spear-pointed drill in dental engine. The object is to penetrate the pus sack in order that at once we may accomplish both the most direct and certain drainage, and also by simple wounding



change from its lower form of inflammation, that which has but sufficient energy to grow fistulous tissue, into one of acute retrograde metamorphosis, from which we may reasonably expect healthy scar tissue will be rebuilt. The direction of the incision is therefore determined toward the apex of single and the bifurcation of all double roots.

This emergency operation can quite as well be performed after that of immediate root-filling, and in the experience of many is one seldom required. Occasionally necrosis of the alveola, resulting from chronic blind abscess, is a complication to be met with, but the treatment must even under such circumstances, be subsequent to and separate from that of the root, though it should undoubtedly be undertaken at one and the same sitting.

Objections urged against immediate root-filling on account of any other of the above enumerations except the putrescent condition within the pulp canal and dentinal tubuli, seem now to have been already answered. The question therefore resolves itself simply into this: Can a putrescent pulp canal be made antiseptic, at one sitting, to an extent warranting its immediate and permanent closure?

Prefixing the usual "If," the theorist may give an equivocal answer, but the thorough and painstaking, practical man, "if" he has ever tried immediate filling of roots, will emphatically answer *yes*.

[ To be continued. ]

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## RUBBER VS. PLATINUM PLATES.

BY EDWARD H. BOWNE, M. D., D. D. S.

Recently, on examining the mouth of one of my patients, she casually remarked that, by the advice of an eminent New York City physician, she relinquished the use of a rubber plate, and by his advice had an artificial denture manufactured upon platinum. The rubber plate was very tight, and hence her mouth was kept irritated by the "suction."

Some time ago I inserted a set of upper artificial teeth for a lady who had worn a set of teeth mounted upon platinum for many years. Notwithstanding the boasted therapeutic effects of this metal upon the mucous membrane, this particular mouth (the palatine surface, of course,) was in a horrible condition. The membrane of the palate beneath the plate was corrugated in tremendous folds, producing enormous fissures, apparently almost reaching the maxillary bone, and coated with mucus. In fact, it was "quite" as bad a case of aggravated "sore mouth" as I ever saw produced by a rubber plate. In conclusion, I would remark that the platinum was perfectly pure, and the artificial denture had been manufactured by a reputable New York dentist.

## THE NINTH INTERNATIONAL MEDICAL CONGRESS.

It is amusing to observe the disposition of the different journalists toward the Congress. Those who were present unanimously concur in the opinion that it was successful in an eminent degree; that it settled down at once to active and legitimate work, the nature of which has been briefly stated in the carefully prepared reports of the various sections published in the *New York Medical Record* and in the daily issues of the *Medical Register*. A daily newspaper, of folio, double column form, containing twenty-four pages, devoted exclusively to technical, professional matter, was an enterprise of magnitude of an extraordinary character, and which of itself betokened an extraordinary event in the history of medical assemblies. That some persons were not satisfied with the work done by the Committee of Arrangements is but natural. It would be impossible to satisfy a very large number of persons in a matter of this kind. The committee, however, did provide meeting places for the general sessions of the Congress and for the various sections. It did provide entertainments, varied in character, and so extensive as to permit every member of the Congress to enjoy himself in more ways than one upon every evening during the entire session. The entertainments were varied in character, from social receptions in private houses, public banquets, and free garden parties, to steamboat and railway excursions; and surely there could be no room for complaint upon the part of any modest member of the Congress who attended to take part in the legitimate work of the meetings. We take it, therefore, as but natural that some shall complain and some shall appear extravagant in their praises. There can be little doubt that many papers were read and discussed in the sections which were not altogether startling in the original nature of the matters presented.

It may be that some of the papers were scarcely important enough to justify the time which was given to them. It must, however, be admitted there were many others embodying the results of original experiment and clinical research of great value. The general addresses were a fair average of their kind. The work of the sections, it may be fairly assumed, will, when published, present quite as creditable a showing as that done at similar meetings on previous occasions. Taken then altogether, the Congress marks an important epoch in the history of American medicine. It is an event which will not be forgotten for a generation at least.

That Dr. Billings closed the library of the Surgeon General's office during the sessions of the Congress, was no ground for public scandal. Surely the persons attending the International Congress had no time to

go about sight-seeing, and a great deal less time to be wandering through so great a library, and that miles away from the place of meeting of the sections, in which it is presumed every member of the Congress must at least take daily interest. That the chairman of the Committee of Arrangements permitted the Marine Band to play at the annual picnic of the Trimmers and Cutters of the Baltimore Tailors' Union was not sufficient to justify any public mention. A medical congress does not need a marine band. That Dr. Durante sought the opportunity of advertising himself to the world as a disappointed candidate for a prominent place in the Congress, and that Dr. Murphy, of Dublin, who had never edited any thing in his life, or written any thing known to the profession in this country, should have felt insulted because he was not invited to the editorial banquet, are matters common enough, in fact, to that class of people; and there are some such in every very large assembly. Let us be men, above such quibbling; let us consider simply that which is important, and that which is essential and part of the legitimate work of the Congress, in any attempt at criticising it, and there shall be less discrepancy of opinion among the brethren of the press.

In Louisville it was stated in the *Courier-Journal* that certain members of the profession here would attend the Congress, or had already gone to Washington for that purpose. One member, who felt that the Congress could not assemble without his presence—or, at least, he seemed to feel so—published a card, stating that it had been rumored in the community that he would attend the Congress, but that he would do no such thing. This is simply an amusing incident of the childish disposition of a man who is old enough to know better. It is absurd to suppose that in any international gathering of the medical profession, any particular set of men should be prominent at each succeeding triennial session, taking a conspicuous part in the various sections. The very nature of an international assembly of scientific men forbids such an occurrence. There must, at each Congress, occurring as they do in various countries, be prominently engaged in the sections a different set of men; and if, when we go to Berlin, Prof. Schleichhaut should not be present and take part in the meetings, no material damage to humanity shall result. If, perchance Bismarck himself shall conclude not to be present at the inaugural ceremony, it affords no just ground to suppose the officers will not be able to discharge their various duties. It does not follow that the Congress would be less successful in a scientific point of view; and if it has any value at all, it must be in the work done in the sections; and it is never to be a question who was not present in any scientific assembly, and it is unfair to make such a criticism.

It is conceded that twenty-eight hundred members were registered and took part in the Congress at Washington. Surely, so far as numbers go,

this was enough. Now, if the work done in the sections was creditable—and we maintain that it was—it makes no difference as to its results—whether Dr. Jacobi, or Dr. Agnew, or Dr. Bartholow were present or absent. The Congress met, the various sections held their daily sessions, and adjourned at the appointed time; the character of the work done has been pronounced creditable; it was eminently satisfactory to those present in the sections; then the Congress was necessarily successful. How long the results of any of the labors done at this meeting will live, time alone can tell.—*Progress (Louisville, Ky.)*.

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### STOCKTAKING OF THE CONGRESS, 1887.

We have come to the close of the Ninth International Congress, and for three years we shall be free from the necessity of contemplating its successor. What, then, has the Congress done? Many from our midst went over to Washington, but what benefit has their visit been, either to themselves or to the profession at large? To estimate the general work of the Congress upon any scale of justice we have to remember two incidents which occurred during the period of its preparation. The first event was the great and most unfortunate split of the East from the West and South, which at one time threatened to abort the whole scheme, and which eventually crippled the endeavors of the Executive and prevented the meeting being representative. As a result of the secession of the East, not only did the Americans lose the co-operation of many of their most illustrious men, but much distrust and timidity were engendered in the minds of foreigners. Nor can it be denied that in spite of the strenuous, able, and kindly efforts of the American officers of the Congress, the meeting was permanently injured by this disruption, and many of the best-known names of the medical profession throughout the world were conspicuous by their absence from Washington. And the other incident was the foolish attempt made to quash the Dental and Oral Section, an attempt which was so completely frustrated that the said section became one of the most, if not the most, important departments of the Congress. In numbers, the meeting at Washington was behind that of London, 1881, for while 3,182 registered their names in London, 2,755 persons were credited to the American meeting. All who were guests at Washington feel very cordially their indebtedness to their American fellow professionals, and will for a very long while remember their hospitality and courteous bearing towards the "strangers." Among the sections our own specialty was very conspicuous; with 500 entries it was able to present better audiences and wider discussion than most of



the other sections. If the communications read were not all very first rate, it must be remembered that the committee appointed to winnow the chaff from the wheat appeared to have taken too good-natured a view, and to have left their "gift of criticism" behind them. There can be no doubt, and we are pleased to find our professional brethren of America were the first to notice the matter, that much really valuable material was crowded out by the intrusion of silly papers and vapid discussions. As far as English Dentistry is concerned, it is not going too far to say that we were not represented. No really important paper was offered by an English dentist dealing in an exhaustive way with professional matters, and the leaders of the English profession held back in a most regrettable manner from the Congress. A feature of our section which interested all, and imparted a practical relief after some of the rather slow "talkie talkie," was the establishment of clinics. No class of professional entertainment can compare with that afforded by seeing another actually engaged upon some new method or unfamiliar development of *technique*. One often reads with wide-open eyes and mouth agape of prodigious developments of American dental art, and all of us were more anxious to witness with our own eyes the actual practice than to hear the theory of "how to do it." After all, an ounce of practice, especially when it is dental, is worth a hundredweight of precept. Clinics are what we all have need of, and it would spare us a good deal of valuable time if every one who brought a new procedure before a society should be bound to demonstrate upon a patient the practicability of his theory.

One other lesson taught by the Congress needs comment. Although in London we possessed an Oral Section at the Congress of 1881, the dentists were left out in the cold at Copenhagen in 1884, so that the undoubted success of a Dental Section in 1887 gives earnest of its continuation in subsequent meetings of the International Medical Congress. After much dispute and many rather silly papers anent the subject "Is Dentistry a Branch of Medicine?" the American mind has settled down into an affirmative state, and there we trust it will rest. In England, with perhaps a few exceptions, dentists regard themselves as part of the brotherhood of the healing art, and are so received by the doctors. As time goes on, most dentists will bear registrable medical diplomas over and above the L. D. S., and then the matter will be settled; for the present a few storms stirred up in teacups are amusing, and break the monotony of dental life. The Congress of 1887 is over; but friendships made, debts of hospitality incurred, are like chains of roses, unbreakable by their very nature, and will, we trust, prove sempiternal. When America comes to England let us not be wanting in efforts to show her how heartily we appreciate all her past kindnesses, her hospitality and courtesy.—*The British Journal of Dental Science*.



## FAILURE OF FILLINGS.

BY G. S. STAPLES, D. D. S., SHERMAN, TEXAS.

Read before the Southern Dental Association, Old Point Comfort, Va., September 1, 1887.

Finding my name on the list of names composing your committee on operative dentistry, my first impulse was to make no attempt myself, but leave it to "the other fellow" to prepare a paper. But, as I know, we are too much in the habit of waiting for "the other fellow" in such matters. I, after reflection and through solicitation of our worthy chairman, decided to prepare a paper, whether I said anything or not.

As I made a few remarks during the discussion of the failure of fillings, at Nashville, last year, which seemed to have stirred up a "little breeze" among some of the members, and as I am satisfied my meaning was misconstrued at the time, I have selected the subject of "Failure of Fillings" for my paper.

Now, gentlemen, I do not propose to make any apologies for what I may say in this, for I have to be allowed to talk plainly, or not talk at all. I only propose to give you my own humble opinion for what it is worth; just that and nothing more. So, should I happen to hit any one on a tender spot, just clap your hands on the spot until it quits hurting, and take it in as good part as it was meant.

If there is any one subject pertaining to dentistry that I have given more thought than any other, it is the subject of failure of fillings. And I have arrived at the conclusion long since (and become more convinced of the fact every day), that more than ninety-five per cent. of failures is due to lack of thoroughness. So I propose to enumerate what I perceive to be some of the principal points of "lack of thoroughness." The first instance is the lack of thorough judgment on the part of tutors in selecting material for dentists. I believe the first, greatest and by far the most frequent cause is not, as our "Old" New Departure friends would say, due to electro-chemical incompatibility of the filling material to dentos; but rather due to electro-magnetic incompatibility between operator and patient, and positive incompatibility between the operator and his work. To repeat an oft-repeated saying (and one which none was ever truer) dentists are born, not made, and he who thinks he can take a young man, and because he has a very good education and an average amount of intelligence on general subjects, but no natural turn for dentistry, and make a first-class dentist of him, will find himself very much mistaken, and his pupil lacking in thoroughness all the way through.

Then comes a class of men who were born slipshod, raised slipshod and everything they do is slipshod, and, although they have the natural

ability, their entire lack of thoroughness makes their practice almost a failure. Next comes a class of men who were born stingy, and who seem never to have cultivated any other crop through life, and so the natural result of their stinginess is lack of thoroughness in all their operations. They commence to prepare a cavity, and that they may use as little filling material as possible (especially if it be gold), they fail to thoroughly cleanse the cavity, for fear of getting it too large, and then they fail to consolidate the filling in order to economize again. And right here, gentlemen, I am sometimes afraid that this class is more numerous than most of us would like to believe.

Then comes the "all gold crank," who, because of his lack of thoroughness in manipulating other filling materials, decides that nothing is fit to fill teeth with except gold, and so uses gold in all cases.

How often do we see splendid gold fillings in mere shells of teeth, fit monuments to attest the superior skill of the operator; but alas for the preservation of those shells, it is but a few weeks or a few months at best, until the thin walls crumble away, leaving those fine fillings standing solitary and alone, like Sherman's chimneys in Georgia. Seeing such teeth filled with gold always reminds me of a little Frenchman who used to practice dentistry in our country when I was a small boy. In those days dentistry was not the scientific profession that it is to-day (as we all know). So the Frenchman always endeavored to impress it on you that he was something more than "von leettle denteest." So, in a crowd one day, while expatiating on his own accomplishments, he remarked: "Me no leettle denteest; me von operative surgeon; me excise ze anterior maxillary von, two, tree time. Beautiful operation! beautiful operation!"

"Well, Doctor," says a bystander, "how did you succeed, and how did your patients do?"

"Oh, pye gar, ze patient dey dies, but it vas von beautiful operation! von beautiful operation!"

Just so with the "all gold crank." He would waste valuable time and material, and sacrifice the tooth, just simply for the pleasure of seeing the result of "von beautiful operation."

Then come our very best operators, and they too make failures. Then they begin to look around for the causes of failure. One will fill a tooth with cohesive gold, and it fails. Another tells him if he had used non-cohesive it would have been better, and still another would advocate amalgam, and so on; the theory advanced being that the other materials being more plastic are consequently more easily forced into all parts of the cavity than cohesive gold, and so requiring less care to manipulate them. But having failed with them all (and it being human nature to look to everything but self for failures), he finally concludes it was the tooth at fault, and nothing would have saved it. But right there is where

he makes the mistake in not going far enough with his investigations to discover the true cause of failure. I am sure that, had he gone a little further (in the great majority of cases), he would have discovered the true cause of failure to be lack of thoroughness in some part of the operation. Either the cavity was not thoroughly prepared, or in filling the plugger didn't reach every portion of the cavity, hence the natural result—failure. And right here, before closing this paper, I would call attention to one of the most fruitful causes of failure, “the retaining pit.” Some of the worst failures, I believe, are caused by deep pits, severing the thin walls from all points of nourishment and thereby causing them to dry and crumble. I claim that no one can do strictly first-class work without an assistant, and with one to do the malleting, allowing me to use my left hand to hold the gold in place until I get it thoroughly anchored. I find no use for pits.

So what we want is thoroughness at every point. The thorough application of the business end of thorough dental instruments to every part of the cavity, with a thorough dentist at the other end, means success. Anything else will always result in failures. So, first be sure you understand your business, then be sure you have thorough instruments, then make thorough use of them.

When that is the case, then we will hear less complaint of failures of fillings, and less abuse of the materials used for filling teeth.—*Southern Dental Journal*.

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## THE IMMEDIATE FILLING OF PULPLESS TEETH.\*

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BY LOUIS OTTOFY, D. D. S., CHICAGO, ILL.

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Almost any novel suggestion or practice, which is at variance with established methods or principles, is at first received with diffidence and mistrust; especially if the new practice is not entirely in accord with established laws, rules or principles; hence, when the method of treating pulpless teeth at one sitting, irrespective of previous conditions, was brought to the notice of the profession, naturally the practice was pronounced by many to be irrational and unscientific, certain failure was predicted because it was entirely in opposition to well established physiological laws.

When there is any new method or process suggested, it creates immediately an idea that its application must be universal, and some men are not prone to admit success unless the application proves universal and invariably successful.

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\* Read before the Odontological Society of Chicago.

This is true not only of immediate root-filling, but of many other practical subjects relating to our profession. Matrices, separators, implantation, bridge-work, and even crown-work, and a number of other practical methods or operations, are, by many, not considered successful because they are not universal in their application. The mind, therefore, should be freed from this impression that the practice about to be advocated in this paper *is* universal. Its sphere, on the contrary, is circumscribed by certain narrow limits, and whenever those limits are passed, the result is, or may be, unfavorable.

There are reasons why the immediate filling of pulpless teeth is justified in this age of steam and electricity, for one of the cardinal principles insuring the favorable consideration of any new invention or novel suggestion is found in its time or labor-saving quality, and it is principally on this ground that immediate root-filling suggests itself to the consideration of the dentist.

As it is customary with all dentists to fill immediately the roots of single-fanged pulpless teeth having an alveolar abscess connecting with the exterior, or those in which the pulp has just been devitalized and extirpated, those classes of teeth are excluded from consideration in this paper. Reference will be made only to teeth which are provided with blind abscesses, or whose periosteum is acutely inflamed, and which it has been customary to treat from two to six times prior to introducing the root-filling. The subject selected for this operation—which has been termed heroic treatment—should be (as in all cases necessitating rapid tissue reproduction, or rapid transformation from pathological to physiological conditions), healthy, robust, and usually young and active; those provided with nervous and sanguinary constitutions being preferable to ænemic, phlegmatic, and lymphatic constitutions.

Any tooth is a proper one for the operation, but free access to all roots should first be obtained, for thorough cleanliness and dryness are all-important factors. The rubber-dam should be adjusted, the *debris* entirely removed from the cavity before any attempt is made to enter the pulp-chamber, and the root canals, once opened, should never be bored or reamed, nor should any attempt be made to enlarge them; but instead, a good supply of very fine piano-wire instruments should be provided. The first step consists in saturating the entire tooth and cavity with a solution of bichloride of mercury, one part to one thousand of water; then follows the thorough cleaning of the canals with cotton wound on broaches and dipped in chloroform or ether, the object being to dissolve and remove the fats and foreign substances by the aid of these volatile agents. Only very few hairs of cotton should be used, thus preventing a pumping or forcing action toward the end of the root.

These washings should be continued assiduously until neither odor nor



color is perceptible. However, in roots where the apex is very large (a fact readily determined by the experienced hand), the cotton receives a slight yellowish tinge, which does not cease, and is no bar in those cases to proceeding with the treatment.

After thorough cleaning, a solution of bichloride of mercury, one part to two hundred and fifty parts of water, is introduced into the root, but not forced beyond the apex. This having been allowed to remain two or three minutes, it is completely removed, and a weaker solution, namely, one part of the bichloride of mercury in one thousand parts of water, is forced into the root and beyond the apex. After a conscientious application of this powerful germicide, the root canal is thoroughly dried, and peroxide of hydrogen is allowed to take its place, which, also, should be pumped with a piston-shaped piece of cotton into every available space within the root and beyond it. If any pus is present, and its presence is indicated by the peroxide of hydrogen, the bichloride of mercury, one in a thousand of water, should again be used; but if no pus is present its use may be dispensed with. The root canals are now carefully dried with hot air, and are then again medicated by winding cotton on a broach, moistening it with eucalyptol, and dipping it into iodoform; this is forced into the roots very thoroughly and conscientiously. While in this condition, the gutta percha dissolved in chloroform is introduced, in the usual manner. Instead of the gutta percha cones, I have been in the habit of making cones of oxyphosphate of zinc, and forcing them into the canals in a semi-hardened condition (either may be used); and acting as a piston, the soft gutta percha should be forced by the cone, thoroughly driving it into every space, irrespective of the fact of its passing through the apex of the root. A filling of gold (if not too large a cavity) may be immediately proceeded with. Any of the plastics may, almost invariably, be introduced at once.

The application of a counter-irritant to the gums is then indicated, which may be either a mixture of equal parts of tincture of iodine and tincture of aconite root, or an iodine paint, which is iodine dissolved in alcohol, four times the strength of the officinal preparation. In order that either may prove effective, the tissue to which it is applied must be dry. The patient is instructed to return within twenty-four hours in case of trouble. As a general rule, inflammation, sometimes quite severe, of three or four hours' duration, will follow the treatment. When a case, thus treated and filled, is successful, it does not differ in any way from a tooth treated in the usual manner; and, I believe, the liability of recurrence of disease is not more probable than in those subjected to a prolonged course of medication. In a few of my earlier cases the treatment proved unsuccessful, the patient returning the following day with the usual symptoms accompanying the formation of alveolar abscess, but by

careful observance of the principles herein laid down, general success follows the practice. While not recommending the method for universal practice, all practitioners will find a number of cases in which it is impossible to continue, or even undertake, the treatment of a diseased tooth, or when, from any reason, the operation must be done immediately, the tooth lost or its treatment entirely abandoned; in these cases, certainly, an attempt to thus save the tooth would be entirely justified.

The following precautions should be observed, *invariably*:

1st. Do not select patients of lymphatic, ænemic, or otherwise sluggish constitutions, but robust, healthy persons. 2d. Use none but absolutely pure and reliable remedies. 3d. Perform each step faithfully, conscientiously and thoroughly before another is taken.

It requires from one-half to one and one-half hours to properly perform such treatment.—*The Dental Review*.

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### IMMEDIATE ROOT-FILLING.

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In dentistry, as in medicine, the constant tendency is toward the exaggerated employment of a commendable practice or remedy. When microbes were first demonstrated to be the cause of certain zymotic disorders, many physicians, possessed of more enthusiasm than judgment, straightway jumped to the conclusion that the origin of all diseases was now discovered, and antiseptics was the specific for everything, from corns to consumption. "Gaseous enemata" is the latest exploded method, but for a time every tuberculous patient had a tube in his fundament.

In dentistry the latest craze is immediate root-filling. That dentists in the past have medicated too much cannot be successfully disputed, but it seems to us that we are now rushing to the other extreme. That in root-canals, long septic, it is sufficient to introduce a disinfectant, this to be immediately followed by a germicide and that by a permanent root-filling, does not seem to us like a safe practice. The products of infection are frequently infiltrated into the tissues, not only of the tooth itself, but of the territory beyond it, and it takes time for the agents to reach the most distant point. It is impossible in many instances to know when the whole is made entirely aseptic.

Again, there may be constitutional disturbances which demand prolonged treatment, in which the healing process must be begun before it is safe to leave nature to her unaided resources. There are products which must be absorbed or otherwise disposed of. There is a low chronic stage of disease, with but slight recuperative powers in the system to

commence and carry on the repairs demanded. What surgeon dares close up a deep cavity without providing means for drainage, if the wound be reinfected?

A root cannot be well filled until it is entirely dry, and there is frequently an effusion of moisture, of one character or another, which lasts for some time before it can be entirely checked. There are other reasons which may forbid immediate root-filling, yet we are convinced that it might with profit be practised much oftener than it now is. But enthusiastic speakers in the heat of debate sometimes make exaggerated statements, forgetting the forbidding circumstances, and urging as without exceptions a rule which is only applicable in a majority of cases, while inexperienced young listeners seize upon the declaration, perhaps but partially comprehended, and run off with the shell upon their backs, like half-hatched chickens, only to meet with disappointment and to curse the day in which they attended a society meeting.

Such a case recently came under our own observation, and was a corollary to the debate upon root-filling at the late meeting of the American Dental Association. We do not think that the dentist who made the mistake in question, and who certainly is excelled in intelligence by very few, will again fill a canal which has long been septic until he is more sure of his ground and has tested the conditions. Nor will he again place implicit confidence in the dogmatic assertion of any man until he has tried the matter for himself. "Prove all things; hold fast to that which is good," is an excellent rule of conduct in every situation.—*Editorial, Independent Practitioner.*

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### IMPASSIONED CRITICISM.

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Dispassionate discussion of subjects of a scientific nature seems always best, because the whole truth is more likely to be drawn out. This fact seems to be lost sight of occasionally, both at our dental conventions and in our journals.

We quote from the *Independent Practitioner* bearing on this point: "But enthusiastic speakers, in the heat of debate, sometimes make exaggerated statements, forgetting the forbidding circumstances, \* \* \* while inexperienced young listeners seize upon the declaration, perhaps but partially comprehended, and run off with the shell upon their backs like half-hatched chickens, only to meet with disappointment and to curse the day when they attended a society meeting."

Another instance of debating school oratory and unfairness, is mentioned in the subjoined from the *Western Dental Journal*:



While the discussion of Dr. Craven's paper upon this subject was progressing at the International Congress, and a speaker was frantically groping for adjectives with which to express his disapprobation of the essay, an English dentist at our side said: "It is not fair to jump on a man in this way. I assure you that we, in England, pretty generally believe that dead teeth are treated to death by some practitioners. We generally practice immediate root-filling, and with entire success." The audience, we think, largely believed as did the Englishman. While Dr. Craven, we think, carries his no-medicine practice entirely without the bounds of reason when he declines to use antiseptic and germicides upon organic matter which must remain in the tooth, yet it is no doubt true that there is over-treatment to the verge of folly advocated by men who might go west and be taught better.

This disposition to "jump on a man" is also well exemplified in an editorial on Immediate Root-Filling, in the *Independent Practitioner*, preceding this article.

We happen to know the "inexperienced young listener" who was at the "Falls Convention" and who "ran away with the shell on his back," and would say that he has met with no disappointment, as predicted, in adopting the practice of immediate root-filling; on the contrary he has had remarkable success in a considerable number (35) of cases, the one mentioned in the *Independent Practitioner* being the only one up to the present writing that has caused a moment's trouble. The I. P. editor informed us that he had not even given the method a single trial, and in view of that fact his rather caustic criticism made the chicken feel that the verbose editorial elephant had stepped on him without just cause or personal experience in the subject under consideration.

"Nor will he again place implicit confidence in the dogmatic assertion of any man until he has tried the matter himself." That is just what the chicken did! He tried the matter himself! And succeeded!

That this "corollary" case should be scored as a failure for the practice of immediate root filling, can hardly be maintained, because the same unpleasant incident has undoubtedly happened in the office of every practitioner of much experience under the old regime of indefinite root treatment.

The case in question, very briefly stated, is that on the night of Saturday, October 15, the learned editor was awakened from refreshing sleep, called to his operating chair by the urgent appeal of one Mrs. H. for immediate relief from intense pain, located about the roots of a right superior first bicuspid. The tooth had been treated and a large gold filling inserted on the afternoon of the same day, and right here we would say, that the only mistake was in inserting so large a filling on the same day as treated. The patient was persuaded by the I. P. editor to try palliative treatment. Medication of the overlying gum tissue was

resorted to. While waiting for beneficial results we strongly suspect the famous nightgown editorial must have been evolved. The treatment not proving beneficial, immediate relief was obtained following the deep incision of the gum as recommended by Dr. W. H. Atkinson, in the October number of the *Independent Practitioner*, page 537. It would thus seem that it is sometimes convenient to have a copy of the I. P. at hand in cases of emergency.

Had further reports from this case been waited for, this "jump on a man" editorial would hardly have been written, for they bear out the correctness of the principles underlying the practice of immediate root-filling, as will be seen from the subjoined report which we are prepared to vouch for:

October 16th.—Considerable tenderness of tooth, no pain.

October 17th.—Slight tenderness, no pain; and the occlusion of the filling against antagonizing tooth was somewhat lessened with corundum wheels without material inconvenience to patient.

October 19th.—Patient reports being able to masticate with perfect comfort; gum tissue about tooth appears perfectly normal, and the tooth itself, which before filling was very dark, has now, in consequence of the bleaching incident to the use of the peroxide of hydrogen, assumed every appearance of a *healthy live tooth*.

The lesson really to be deduced from this is, after immediate root-filling has been resorted to in the treatment of a tooth, that if gold is to be used as a *crown* filling, the operation had better be deferred until resolution of the pericemental membrane has come about, for fear that the continued impact of the plugger may cause acute pericementitis, which was really the cause of all the suffering in the case under discussion.

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## WHY WE DO NOT ADVERTISE.

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Among ethical questions, there are few which possess at the same time greater interest to professional men, and offer greater difficulties, than that of the admissibility of advertising. It is a mere quibble to say all professional men advertise; doorplates, visiting cards, signed articles in the journals may be considered advertisements, but such means for making oneself known cannot come under the bann of even the most scrupulous anti-advertiser.

Advertising proper, consists in issuing commercial announcements in the lay press; intimating for example that Mr. So-and-so does on such-and-such days see patients at certain times and places; extolling the value of Mr. Blank's painless system, or worst of all, issuing catchpenny

announcements headed "TEETH! TEETH! TEETH!" and continuing in the same vulgar strain to the effect that Messrs. Pullemout and Smashem are prepared to supply whole sets for the modest fee of *One Guinea, Best Quality of Mineral Teeth*, guaranteed! Of course the chamber of horrid advertisements—and we possess a large, varied and really surprising collection—contains many gradations in atrocity of diction and "turn out." The lower types such as we have instanced above are, perhaps, less dangerous than the insidious "puffs" of those gentry, who in a seemingly modest way, announce that some bogus tooth shop, grandiloquently termed an "Odontal Emporium," or some such ilk, is open daily between 10 and 4 and is attended by be-doctored dentists who are not wholly innocent of sham colleges.

In "Thurley Tighe" Mr. Felix Weiss cleverly portrays the difficulties a struggling dentist experiences when staunch and loyal to his belief that advertising is discreditable, ungentlemanly and unprofessional, and yet sees the apparent success of his less scrupulous neighbors who disseminate handbills and rush into the unenviable publicity of the daily press.

The non-advertiser has much against which to contend, and in the case of those not blessed with private means, patronage or a snug certain practice, there must be very cogent arguments which satisfy them that reputable poverty is better than a stalled ox and advertising. The possession of five hundred pounds a year drawn solely by newspaper puffing is too strong an incentive to wrong-doing for the impecunious to resist unless they see some extremely plain and patent reasons why they should refuse ignominy when savored by a competent income.

And yet there are reasons plain enough why all men should refrain from touching the pitch of press advertisements. Let us consider the question purely from a worldly wise and common sense point of view. The men who advertise in the daily or weekly press never attain professional eminence, they are branded as so many mountebanks and hucksters. It matters little whether they belong to the class our correspondent "Molar" describes as honest, who do good work and take the liberty of announcing the fact in the daily or weekly press, or whether they are members of the many swindling concerns started to extort money out of the needy under pretext of giving *bona fide* good mechanical work at prices which would not cover the cost of the material; all these men go down into one category and neither the profession nor the public will for one moment believe in their honesty or *bona fides*. This being so, it follows that such men can never achieve a social position of respectability without which life to an intelligent, thoughtful man is bereft of its main solace. Such men further do not, as a rule, achieve a great pecuniary success. The output of the cost of advertising represents a substantial income in itself, and as competition grows keener, so does the necessity for more lavish expenditure of this kind become imperative.

Unless a man makes up his mind to become an out-and-out swindler, offering to do work for sums he knows cannot pay him, and so to make his own pocket safe, substituting materials and workmanship far below the standard he promises, and not stopping at such trifles as cases which are hopeless and irretrievable misfits, advertising really does not pay. If you are honest there is no short cut to prosperity; the best warranty for success is the character of your work and the conduct of your business. The argument so often brought up, others do it with impunity and benefit, why then shall I not do likewise? is the most hopeless of *non sequiturs*. Fagin and his pickpocket school might well deal in such sophisms, assuring some guileless wight that purse-lifting is a sure means of acquiring wealth and one which is rendered fully justifiable by the examples of kings and barons of olden time, and of promoters of bubble companies and "operators in differences" upon the modern stock exchanges. Honesty, even in these latter days of scoffing and sneers, still remains the best policy; and the man who has lived with clean hands and a lieless tongue will die a happier, if not a richer man, than his shifty, mendacious neighbor.—*British Journal of Dental Science*.

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## INFLUENCE OF THE DENTAL CHAIR.

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It may, at first blush, appear to be a new but startling proposition, but upon close examination you will agree with me when I assert, that because a man passes an examination before a corps of professors, he is not therefore necessarily qualified and proficient. There are members of our profession who sit in their offices, with their diplomas signed and sealed—and oftentimes framed—impatiently waiting for patients, and in whose hands you and I would not risk the care of a fifteen-dollar horse. There is something more required than a sufficient amount of muscular force to "pull" a tooth, or the mechanical knowledge of how to fill one.

Our profession calls upon us to deal with men and women in a nervous condition known to none but the dentist, and it is here that the finer knowledge, not so much of the science as of human nature, is required. It is this quick intuitive perception, this ready and thorough insight into human nature, with a deep sense of human sympathy and pity, which gives to the member of our profession his chief elements of success.

A patient comes into the office impressed with the ideal horrors of all that is terrible. A glance should reveal to you and me the fear and trembling of a delicate, sensitive nature. We should be able to diagnose the condition of the nervous system and mind with the same accuracy and exactness with which we would place a filling. Here is where our



work begins. A cold "good morning," "take a chair," "what can I do for you," as so often heard in a cold, heartless business tone of voice and manner, does more to drive patients from us than anything else we can possibly imagine. While on the other hand, a kind look, a pleasant smile, a friendly greeting, a tender solicitude such as we would extend to a weeping child (for we are children when sick or suffering with pain), and a kind assurance that we will be as careful and gentle as possible in our treatment, and then all through the operation remember to use words of sympathy as well as looks of kindness; they will exert an influence that cannot cease to exist.

Such kindness, sympathy, understanding of human suffering and gentle solicitude, universally recommend themselves to the considerate judgment of those who, from necessity, must suffer the trying ordeal of the dentist's chair. And even if there were no higher standpoint of observation than merely that of financial and business success, no better principle or rule of action could possibly be adopted.

The dentist can impress his kindness and skill so firmly upon the mind and appreciation of his patient, as to oftentimes expel fear and nervousness; and in other instances induce the endurance of pain that were otherwise impossible.

The extent and good influence of kindness in our work can not be measured, and it is within the reach of every man who chooses to adopt it as a part of his profession.

The man in any profession who is honest and diligent, and who possesses an average commodity of intelligence, will soon acquire sufficient skill to do good, substantial work, and render serviceable assistance to his fellow-men, but unless he also possesses those finer elements of human character which respond in kindness and sympathy to the suffering and sorrow of his fellows about him, he is unfitted for the actual practice of his profession, and can never rise above mediocrity.—*Dr. W. H. Williamson, of Bismark, Dak., in The Dental Review.*

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## CLEANING TEETH.

Salivary calculus and stains on the teeth, at times, when the mouth is opened, will disgust the beholder, and frequently prevents the formation of a favorable opinion of the person, who is so neglectful of his appearance. Such disfigurements are more noticeable in the mouths of women and girls than in men, on account of the absence of a beard, which often conceals the teeth of men. Nothing adds so much to personal appearance as a clean set of teeth. How necessary it is, then, that dentists should, as examples to their patients, have clean teeth. Many,



however, are unmindful of the fact that cleanliness begins at the fountain head. Teaching and preaching has little effect on a careless patient unless the dentist can exhibit spotless ivories. All of the preceding is only a prelude to a few remarks on the operative procedures relative to cleansing a set of teeth for a patient. The teeth of many people, from neglect, are found more or less disfigured by salivary deposits and stains. The gums are detached at the necks, ragged on the edges and bleed easily. Pus may ooze on pressure from between the teeth and gums. Now, if a patient has from twenty-six to thirty-two teeth, all more or less covered by deposits and agglutinated mucus, food, etc., it is improbable that a dentist, be he ever so expert, could properly remove *all* extraneous matter and thoroughly cleanse a set of teeth in one sitting, even of two or three hours duration. Our own practice is to syringe the mouth with tepid water, generally adding thirty or forty drops of a ten per cent. solution of resorcin to four ounces of water. The deposits are then removed from every tooth, beginning with the third molar, coming forward to the central incisor. This is done both above and below. The deposits are all removed with a pushing motion, save in a few instances, where it is possible by the pulling movement to detach the concretion without tearing or wounding the gingival margin of the gum. It will be found, by a little practice, that this is the most effective method of operating, supposing that properly shaped instruments are used. It also saves time, produces less laceration of the gums and by consequence less interference in operating on account of the slight loss of blood. All stains are then removed from the teeth by the use of wooden, felt, moosehide, leather or rubber points. These should be charged with levigated pumice, powdered Arkansas stone, oxide of tin and finely prepared chalk. During the whole cleaning process the only water used in the mouth of the patient should be injected from the syringe, as it is more efficient and saves time, and the jet of water more certainly removes the fine fragments of calculus and grains of powder than ordinary rinsing with water from a goblet. Fine brushes, which are revolved by the engine, are useful in the polishing process after the calculus has been removed. *Avoid the use of mineral acids in any form for cleaning teeth.*—*The Dental Review.*

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AN OVER-SENSITIVE PATIENT.—The *Medical Times* says that a Philadelphia surgeon lost a good patient (a spinster and pattern of propriety) by writing a prescription for "Fluid Ext. Rham. Cat." After reading the prescription she said that nothing could induce her to swallow such a remedy, and that the doctor ought to be ashamed of himself for ordering it. He is now a sadder and wiser man, and keeps on the safe side by prescribing castor oil for similar cases.

## PAINLESS DENTISTRY.

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BY ALFRED T. PEETE, BRANCHVILLE, S. C.

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Hearing that some of our brethren elsewhere have lately been disciplined for advertising and professing to practice "painless dentistry," one is reminded of the declaration of a certain Western physician, as recorded in one of our dental journals some time since. This gentleman is of the opinion that it is the duty of every medical man to teach all dentists within his reach the true principles of painless dentistry. He further holds that a physician should be consulted in every case of odontalgia or other pathological condition of the oral cavity and its organs. When proper orthodox treatment had produced its invariably beneficial results, the patient might be turned over, if necessary, to the "repair shop" of the dentist.

It would ill-become a humble "mechanic" of the dental persuasion to dispute the conclusions of so high an authority, so the writer will merely remark that he was reduced to a state of much mental confusion, and his faith greatly shaken, by the relation of the following incident a short time since. It was seriously imparted to the writer by the person who treated the case—who is, by the way, a successful physician, as well as a very worthy gentleman :

"The man came to me," said he, "with a severe pain in one of his lower jaw teeth, which was somewhat decayed. I told him, *of course*, that the nerve of the tooth must be destroyed, the first thing. So I took a vial containing, perhaps, an ounce and a half of nitric acid, and ordered the patient to keep perfectly quiet, while I poured a drop of the acid into the cavity.

"I had confidence in my steadiness of hand, and knew that I could pour out a single drop without any difficulty. Just as I had the neck of the bottle close enough to the tooth, the man made a sudden movement, and at least an ounce of the acid was spilled in his mouth. But I seldom lose my presence of mind, and I promptly seized a handful of carbonate of potash and crammed it into his mouth. No material damage was done, and the tooth has never ached since."

Nothing was left us to do but to congratulate our medical friend on his remarkable presence of mind, and to agree with him that the nerve of that tooth was not likely to ache again very soon. But now the writer is once more at sea on the question of "painless dentistry."

Perhaps, it is only "Western physicians" who can teach us the art. Couldn't they be induced to give us more light?—*The Archives of Dentistry*.

## LODGEMENT OF A TOOTH-PLATE IN THE GULLET FOR FIFTEEN MONTHS.

BY HENRY E. BRIDGMAN, L. R. C. P., LONDON.

At 2 A. M., on April 17, 1886, Thomas H——, aged twenty-eight, was brought to my surgery. He informed me that he had gone to bed, as was his habit, wearing a small plate, to which were attached four artificial teeth. He awoke feeling the plate slipping in his throat, and he could, he said, still feel it at the top of his gullet. The patient was nervous and excited; he frequently retched, and expectorated blood-stained saliva; dyspnœa and dysphagia were marked. I examined the pharynx carefully with the finger, but failed to feel any foreign body. With a pair of throat forceps I seized something that I believed to be the plate, but on making an attempt to withdraw it, the dyspnœa increased, the patient struggled, and the forceps slipped. After several fruitless attempts to seize the plate a second time, I desisted, and sent my patient to the Burton-on-Trent Infirmary. There probangs were passed into his stomach without meeting any obstruction. The patient was watched for a few days, and then discharged, the dyspnœa and dysphagia having disappeared.

I saw the man a few weeks afterwards, when he was again suffering from dyspnœa, had a hard, frequent cough, and was expectorating copiously a tenacious mucus, tinged with blood. I continued to see him from time to time until Christmas, 1886. On July 25, 1887, he presented himself again at my surgery, bringing with him the plate with false teeth attached, saying that he had continued much in the same condition as when I had last seen him, being frequently unable to go to his work on account of cough and difficulty of breathing, until July 21st, when, being rather worse than usual, he felt, after a violent fit of retching, something in the back of his throat, when, by means of his thumb-nail, he hooked out the false-teeth, which he brought with him and which he had lost just fifteen months since.—*The Lancet*.

A DENTIST'S BILL.—Three teeth in the head of G. Onesti were operated upon recently by Dr. W. J. Younger, who sent in his bill for \$336.50, alleged to be due him as an aggregate for twenty-two hours and twenty minutes' work at \$15 an hour. Onesti refused to settle, claiming that he considered \$70 to be a reasonable charge. Suit was brought by the dentist, and the jury awarded the plaintiff the \$70 offered him at first.—*San Francisco Examiner*.

## INTERNATIONAL TOOTH CROWN PATENTS.

November 1st, 1887.

A. L. NORTHPROP, D. D. S.

*Dear Sir*—In answer to your request on behalf of the First District Dental Society of New York, asking for our opinion as to the legal position of the dental profession, with regard to the crown and bridge patents of the "International Tooth Crown Company," in view of the recent decision of Judges Wallace and Shipman, in the Richmond and Gaylord suits, and advice as to relief from further claims made under the Low bridge patent, we have to say:

These suits involved the validity of the two patents to Cassius M. Richmond, Nos. 277,941 and 277,943, for "Tooth Crowns, etc.," the patent to Alvan S. Richmond, No. 277,933, for "bridge," all dated May 22d, 1883, and the patent to James E. Low, for "method of supporting artificial teeth by bands cemented to permanent teeth," No. 238,940, dated March 15th, 1881.

The first two patents covered what is known as the "Richmond" and the "Sheffield" tooth crown in all its varieties. They were held invalid, and therefore you are at liberty to make such tooth crowns without being in any way liable to the International Tooth Crown Company.

The complainants have appealed this case to the U. S. Supreme Court, but we do not advise you that any different decision will probably result. The practical result is that the tooth crown is free.

The patent for the Richmond bridge was also held invalid, but the Low patent was declared to be good. This Low patent covers a bridge attached to continuous bands cemented to adjoining permanent teeth, "whereby said artificial teeth are supported by said permanent teeth without dependence on the gum beneath."

The Richmond patent is, as you will remember, for a bridge supported by caps, and the Court held that it was not invention for Richmond to support a bridge on caps, but it was invention for Low to support a bridge on bands, taking all the surrounding circumstances into consideration, and that as a cap was nothing but a band with a roof on it, the Richmond bridge infringed the Low patent.

The practical effect of this decision, if the complainant chooses to follow it up diligently, and unless some new evidence is found, will be to shut the profession out from inserting permanent bridges supported at one or more points by cemented caps or bands without dependence on the gum.

As the matter now stands, any dentist inserting a Richmond bridge (according to the decision), infringes the Low patent; and an injunction would doubtless now be granted by any Federal Judge on application, on the strength of that adjudication alone.



An appeal can be taken by the defendants to the Supreme Court, a year or so hence, after an accounting by them, and determining the amount of profits or damages the complainant is entitled to recover.

The way of relief is for all the dentists of the United States, who supported artificial teeth on a band or bar, surrounding and extending between permanent teeth prior to September, 1878, to send to us at No. 833 Broadway, New York City, or to No. 9 Law Chambers, New Haven, Connecticut, a truthful description of what he did, and for whom, and where and when.

If such proofs can be made strong and clear enough to satisfy the Court that what Low described was well known, and had been long practiced by dentists in the United States before Low claims to have done it, the present case might be opened for re-hearing on the newly discovered evidence—or the Courts might refuse to grant injunctions, upon the ground that the present decision would have been the other way if this evidence had been before it; at any rate, the question of the validity of the Low patent would be re-tried, if its owner ever had the temerity to sue a dentist whose mouth had been closed by a license, in which he covenanted never to deny its validity.

Whether, in a suit against such a licensee, the Court would enjoin upon the *covenants*, under a patent declared void, either before or after the taking of the license, we cannot say.

Your obedient servants,

SOLOMON J. GORDON,

*833 Broadway, New York City.*

JOHN K. BEECH,

*9 Law Chambers, New Haven, Conn.*

## RECENT CHRISTENINGS.

These be times in which we live, and the vocabulary grows apace. The new Duglison must needs add to "housemaid's knee" the more recently discovered affections of "dentist's leg," "pitcher's arm," and "smoker's heart." The first two are English, therefore in good form; the last American, and for that reason nondescript—at least for the time. "Pitcher's arm" is very closely related to "losing club;" while "smoker's heart" is said to be a little racket worked by cigarmakers, through coroner's physicians, against the omnipresent cigarette. "Dentist's leg" is confined to three cases reported in a foreign medical journal and a few kickers at American dental conventions. As for "housemaid's knee," it may be obviated or a cure effected by heeding the advice—"Use a mop and pray standing."—*The Odontographic Journal*.



## CHARACTER.

The main thing about every man is his character. The main question about character pertains to the right method of forming it. A man's character is to a great extent the reflection of his surroundings. It is not so much by trying to be manly, courteous, pure and noble that one attains these qualities, as by being habitually surrounded with those who possess and exhibit them, and having them reflected back upon us, so that we attain them unconsciously, and in that way really and permanently come to possess them ourselves. Then the exhibition of them becomes spontaneous and natural when otherwise it would be merely studied and superficial. The better and more intimate the companionship, the stronger will be the reflected influence for good in the formation of character. For example, the gentleness and purity, the decision and equanimity of a good woman, where her constant companionship is enjoyed, is silently and unconsciously moulding the character of many a man and fitting him for positions of honor and trust which might otherwise be impossible to him. And so generally the immediate surroundings and companionships in which we daily walk and stand and sit, imprint themselves upon us as the seal upon the wax, and thus stereotype our character. "He that walketh with wise men shall be wise" clearly expresses the idea, and as there is but one ideal man we should not forget to cultivate an intimate acquaintance with him, if only for the sake of the ennobling influences to be reflected from it.—*American Pharmacist*.

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WHAT IS PAIN?

It is one thing to know a thing, it is quite another thing to tell it. A definition for pain seems to have been more than lexicographers could "masticate." The *Popular Science News* says:

"An eminent physiologist calls it 'an excess of the sense of touch,' and another 'hyperæsthesia of the sensory fibres.' Dunglison, in his Medical Dictionary, says 'it is a disagreeable sensation, which scarcely admits of definition;' and Gardner, in his work of the same title, under 'Pain,' says 'see Dolor,' and turning to 'Dolor,' we find it concisely explained as 'Pain.' The great French Dictionnaire des Science Medicales coolly and conveniently tells us that to define it is superfluous. Professor Erb, in Ziemssen's Cyclopædia, after some discussion, comes to the conclusion 'that pain is a new sensation, experienced when excitation of the nerves reaches a certain intensity.' Perhaps the Imperial Dictionary covers the ground in describing it as 'an uneasy sensation in animal bodies, of any

degree from slight uneasiness to extreme distress or torture, proceeding from pressure, tension or spasm, separation of parts by violence, or any derangement of functions.' This is also Webster's definition, and is really not more exact than some of the others, although longer."—*Chicago Medical Times*.

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### A FUNNY ILLUSTRATION OF THE POWER OF THE IMAGINATION.

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A short time since a man was taken to one of the Buffalo Hospitals, suffering intense pain. He informed the doctors that his home was down in the country, and explained as well as his bodily sufferings would permit, that he had swallowed his gold plate containing four teeth while asleep. From hour to hour he grew worse, and examinations failed to locate the swallowed article. When he had been in the hospital about four days it was decided that if relief did not come soon it would be necessary to remove the foreign substance from his stomach with instruments. Finally the man's sufferings were lessened considerably and as a test it was decided to give him a little piece of beefsteak. This was done and the poor patient was writhing in agony as soon as he had swallowed a mouthful. His sufferings increased to such a degree that he said he knew he would die if the operation were not performed at once. He described minutely the sensations he had experienced as he felt the plate slipping down his throat. Then, placing his hand on his stomach, he groaned forth: "I feel it right here now, doctor."

The physicians and nurses could hardly keep him in bed—he suffered so much. Preparations were now made for an operation, and just as the surgeon was about to commence, a telegram was placed in the patient's hand. He tore off the envelope and read aloud, as follows: "Found teeth under bed. Come home."

The suffering man got up, dressed, and paid his bill. On leaving the hospital this victim of an over-wrought imagination remarked that he could not for the life of him see what the doctors and nurses saw in his case to laugh at.

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HAD NEVER USED A BREACH-LOADER.—A Los Angeles physician recently prescribed some rectal suppositories for an old soldier. The next morning the doctor called on him and asked how he was. He answered: "First rate, doctor; but them cartridges was mighty hard to swallow; I got 'em down, though."

## THOROUGH EXAMINATION.

BY DR. ELBRIDGE C. LEACH, BOSTON, MASS.

Can anything too forcible be said on this point? Can there be anything more humiliating to the dentist than to look the patient's mouth over and then have the patient point out the one trouble for which he visited you? Can the dentist do better than to spend ample time on his examinations; pointing out the work which should be done at present and taking good care to call the patient's attention to whatever work the dentist may discover which does not require immediate care? For instance, how often do we discover imperfections which do not require attention at once, like superficial decay on the neck of a tooth which it would be unwise to fill at the time of discovery, making a strong point of calling your patient's attention to it and to the fact that it does not require attention at once in the way of filling? How often do patients return after the completion of a course of operations and point out an apparent oversight of yours and thus imply your inefficiency in examination?—*The Archives of Dentistry*.

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 USES OF CHLORO-PERCHA.

2624 WASHINGTON AVENUE, }  
ST. LOUIS, MO., September 3, 1887. }

*Editor of the Dental Review:*

SIR—Referring to your mention of Dr. Swasey's use of chloro-percha, and his method of preventing evaporation, I can not help asking him to discard the *inverted* corked bottle for an Ingersoll *glass covered* bottle, the joint secured by a coating of glycerine. It is perfection in every sense.

There are many pat uses to which chloro-percha can be put, which I am satisfied the profession do not recognize, to wit:—For securing arsenical applications in or upon shallow surfaces, for instantly sealing accidental punctures of rubber dam in situ, a small piece of punk dipped in chloro-percha and laid on the defect; for covering plastic fillings during the hardening process, and many other uses which suggest themselves to a bright, practical mind. Glycerine also has many useful qualities for coating cavities and approaches to root canals, which are to be filled with chloro-percha (the latter will not stick on a surface previously covered with glycerine). For covering all glass stoppers to prevent sticking, for coating (with only a trace) instruments used in working the plastics, used upon burnishers and stones, in place of oil, etc., etc.

Yours very truly,

G. A. BOWMAN.

—*The Dental Review*.

AS EXPERIMENTS I have inhaled chloroform, ether, bichloride of methylene, also nitrous oxide gas, always without ill-effects and receiving at times useful practical lessons.

My last test upon myself was with cocaine, when, about four months since, in the presence of my wife and some friends, I injected, slowly, twenty minims of the solution of cocaine in close proximity to the thumb-nail of my left hand, the result being utter insensibility of the part extending to the first joint. The non-sensitiveness continued for about an hour or more, during which period I subjected my thumb to most severe treatment, but without experiencing the slightest pain or even feeling; partial numbness existed for nearly two days, but unattended with any constitutional disturbance.

I am gradually losing my thumb-nail through the mechanical injury I perhaps stupidly inflicted.

My experience thus far is sufficiently inspiring to make me believe that cocaine is a most valuable drug, and could, I feel convinced, be used with advantage in minor and even major surgical operations, often preventing the infliction of unnecessary pain.—*A. W. Furber, L. D. S., in British Journal of Dental Science.*

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DR. J. A. S. GRANT-BEY, M. D., senior surgeon to Railway Administration of Cairo, Egypt, was lately the guest of Dr. Albert Vander Veer, of Albany. Their acquaintance began in Copenhagen, at the International Medical Congress, in 1884, and the friendship there formed brought about this visit. In the course of his conversations, Dr. Grant-Bey remarked that the Jews are rapidly taking possession of Jerusalem, and bid fair to soon verify Bible prophecy by their return *en masse* to Palestine. On invitation he addressed the Albany Institute on the "Archæology of Egypt," and exhibited his remarkable collection of antiques, and showed himself an able hieroglyphist. The Coptic language, from which many hieroglyphic symbols are known to be derived, is still spoken in Egypt, but not in its original purity. Dr. Grant-Bey does not agree with the view that Rameses II. (Pharaoh) was the husband of his own daughter who protected the infant Moses, as this Rameses himself promulgated the law forbidding a father to marry his daughter.

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"THE DENTAL REVIEW" is, to our mind, one of the most practical dental journals on our exchange list. Send to W. T. Keener, 96 Washington Street, Chicago, Ills., for a specimen copy; or, which is better, send \$2.50 for a year's subscription.



ALKALINE LAKES.—Mono Lake is full of soda, borax and other minerals in solution. The water of both Owens and Mono Lakes is a natural detergent. The dirtiest and greasiest of clothing is made clean in half a minute by simply rinsing the article in the lake. It lathers naturally when agitated. When there is a high wind a wall of suds, three or four feet high, is seen along the shore upon which the waves beat. This quivering wall—in which are seen all the colors of the rainbow and as many beauties as are shown by the kaleidoscope—would grow to a height of ten or twelve feet before toppling over, but that when it attains a certain height the wind catches it up and wafts great balls of it far behind. Some of these floating balloons of lather are as big as a flour barrel.—*Virginia City (Nev.) Enterprise.*

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A VERY INTERESTING account of the doings of the International Medical Congress, from an English point of view, is given in the November number of *The Dental Record* (London), by Dr. George Cunningham. We regret our space will not allow us to print the entire article. It appears that the case of implantations performed by Dr. Younger in the mouth of Dr. J. H. Gartrell was not successful, as in about twelve days they became very loose and were extracted. The failure seems not to have discouraged Dr. Gartrell, as he announces that at some future time and under more favorable circumstances he will try it again. The failure is attributable mainly to too much haste, as Dr. Younger took but six minutes to insert the left lateral.

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“ENGLISH AS SHE IS SPOKE.”—A Colonial contemporary quotes from “a dentist” who was present at one of Dr. Younger’s exhibitions, and says: “Dr. Younger takes a sound tooth corresponding in space to the hole left by the missing tooth, *ligates the gum* and separates it from the *alvial process*, and *drills a cavity*.” [The italics are ours.] Our correspondent goes on to say, “In this morning’s operation a right and a left *latteral* tooth *was* successfully implanted.” How free and unfettered by the conventional trammels of grammar and spelling is this child of the new world! How clearly the onlooking dentist grasped the intricacies of Dr. Younger’s operation!—*British Journal of Dental Science.*

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AN EXCHANGE SAYS: A Liars’ Association has been organized in a Western town, and attention is called to the fact that several editors have joined, though it was unnecessary to so individualize them.



INJURY OF SALICYLIC ACID AND OF ALUM TO THE TEETH.—A Swiss sanitary journal (*Schweizerische Blätter für Gesundheitspflege*) warns against the use of salicylic acid as a constituent of mouth-washes, which has been repeatedly recommended.

According to Mr. Schlenker, a dentist of St. Gallen, a sound tooth loses its gloss completely when placed for a quarter of an hour into a solution of salicylic acid of the strength of 1 in 1,000. Parreidt has shown that salicylic acid dissolves phosphate of calcium, which is the most important constituent of the teeth.

Possibly there is a mistake in the above, as after immersing a tooth in a saturated solution of salicylic acid for twenty-four hours no signs of disintegration appeared, nor was the polish of the enamel affected in the least.

We would be pleased to hear from any one who has used salicylic acid in the mouth, regarding its action on the teeth.

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WE SURRENDER considerable space in this issue to articles on "the latest craze," as immediate root-filling is dubbed by our esteemed contemporary of this city. We have adopted the method, without the crazy part of it, which consists mainly in knowing nothing practically and considerable theoretically in regard to the matter, and are now calmly waiting for the "forbidding circumstances" to assert themselves. We do know that in over twenty-five years' practice, nothing has been with us so completely a successful success as this much-sneered-at method. We would admonish those who attempt it, however, that it takes time, time, time—from one hour to two hours' time, at least—else they may be obliged to follow the example of certain clumsy manipulators and "curse the day in which they" attempted immediate root-filling.

We would state in this connection, that the "half-hatched chicken," referred to in another article, is not the editor of this journal. He passed the chicken stage of his existence long years ago, and is now classed among the respectable "old cocks," and not a sign of a shell remains on his back, either.

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## DENTAL SOCIETIES.

### THE FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK.

Early in the coming January the above society proposes to hold its nineteenth anniversary.

To those who have attended previous meetings, under the auspices of the First District, it is hardly necessary to say that it will in all probability be a profitable and pleasant gathering. Every opportunity will be afforded those who attend to see and hear Dentistry from a scientific standpoint.

We are credibly informed that the officers are now endeavoring to eclipse their former efforts.

## BOOK NOTICES.

**NITROUS OXIDE: ITS PROPERTIES, METHOD OF ADMINISTRATION AND EFFECTS.** By S. H. Guilford, A. M., D. D. S., Professor of Operative and Prosthetic Dentistry in the Philadelphia Dental College. Philadelphia: Spangler & Davis, 1887.

Our first impression, on casually turning over the leaves of this little book, was that it resembled a miniature nitrous oxide apparatus catalogue, and an incomplete one at that; but as our eyes fell on the chapter on "Administration" we became interested, and that interest increased as we read on to the end. Chapters VIII., IX. and X. are of the utmost importance to the users of nitrous oxide gas, and the soundness of the advice given in a plain, comprehensible way is unquestionable. The following will give some idea of the scope of the little work: 1. History; 2. Chemical Properties; 3. Physiological Action; 4. Relative Safety; 5. Advisability of Administration in Special Cases; 6. Manufacture; 7. Inhaler and Accessory Appliances; 8. Administrations; 9. Extraction during Anæsthesia; 10. Accidents and Emergencies; 11. Combined Anæsthetics; 12. Legal Considerations.

**THE PHYSICIAN'S VISITING LIST, 1888.** Lindsay & Blakiston's. Thirty-seventh year of its publication.

Strength, compactness, convenience and durability are the essential qualities which a good visiting list should possess to resist the unusual hard wear it receives. These qualities are all combined in Lindsay & Blakiston's Physician's Visiting List, which has now been published for thirty-seven years. Much new matter has been added, but this has been done so concisely that this section occupies no more pages than formerly.

**MEDICAL CLASSICS.** An interesting and unique journal is "Medical Classics," published by Medical Classics Co., 38 Murray Street, New York City. This is a compilation of ancient medical literature, and is especially valuable when used in comparison with modern writings.

**PEARSON'S DENTAL APPOINTMENT BOOK.**

We are in receipt of one of these convenient appointment books, which is described as "the neatest thing of the kind ever offered to the dental profession." It is small enough to be carried in the vest pocket. Bound in red Russia leather, with pencil attached. Price, 50 cents; with name neatly printed in gold on cover, 75 cents. For sale by all dental depots.

**THE SCIENTIFIC AMERICAN**, published by Munn & Co., New York, during forty years, is, beyond all question, the leading paper relating to science, mechanics, and inventions published on this continent. Each weekly issue presents the latest scientific topics in an interesting and reliable manner, accompanied with engravings prepared expressly to demonstrate the subjects. The SCIENTIFIC AMERICAN is invaluable to every person desiring to keep pace with the inventions and discoveries of the day.

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 BOOKS RECEIVED.

**OVARIAN TUMORS, AND REMARKS ON ABDOMINAL SURGERY, WITH THE RESULT OF FIFTY CASES.** By Edward Borck, A. M., M. D., Professor of Surgery, etc., St. Louis, Mo.; 1887.

**TEETH AND HOW TO SAVE THEM FOR LIFE.** A lecture delivered by D. F. Swengel, B. S., D. D. S., before the Graduating Class and High School at Aberdeen, Dakota, January 3, 1887.

**THIRD ANNUAL REPORT OF THE WISCONSIN STATE BOARD OF DENTAL EXAMINERS.** September 30, 1887. Made in pursuance of law. Also the official roll of qualified dentists for the year ending September 28, 1887.

## DENTAL PATENTS.

ISSUED FOR THE QUARTER PRECEDING THE DATE OF THIS JOURNAL.

- 370,171—September 20, 1887.—OPERATING CHAIR.—Thomas A. Long, Philadelphia, Pennsylvania.
- 370,194—September 20, 1887.—RUBBER DAM CLAMP.—Henry H. Johnson, Hawkinsville, Ga.
- 370,204—September 20, 1887.—FORCEPS.—George W. Melotte, Ithaca, N. Y.
- 370,445—September 27, 1887.—DENTAL ARTICULATOR.—Schuyler Arnold, Caro, Mich.
- 370,467—September 27, 1887.—DENTAL CABINET FOR LABORATORIES.—Filey Gaudin, Donaldsville, La.
- 370,547—September 27, 1887.—DENTAL ILLUMINATING APPARATUS.—Theodore G. Lewis, Buffalo, N. Y.
- 371,053—October 4, 1887.—ARTIFICIAL TOOTH CROWN.—William H. Gates, Philadelphia, Pa.
- 371,054—October 4, 1887.—ARTIFICIAL TOOTH.—David Genese, Baltimore, Md.
- 371,174—October 11, 1887.—DENTAL PLATE.—Rolla M. Chase, Bethel, Vt.
- 371,669—October 18, 1887.—RUBBER DAM CLAMP.—Oliver Carpenter, Oakland, Cal.
- 371,706—October 18, 1887.—DENTAL LATHE.—Robert S. Redman, Newark, N. J.
- 372,317—November 1, 1887.—DENTAL ENGINE.—William A. Knowles, Alameda, Cal.
- 372,397—November 1, 1887.—DENTAL ENGINE.—William G. A. Bonwill, Philadelphia, Pennsylvania.
- 372,400—November 1, 1887.—DENTAL BURRING TOOL.—Arthur W. Browne, Prince's Bay, N. Y.
- 373,079—November 15, 1887.—DENTAL ENGINE.—William B. Mann, Baltimore, Md.
- 373,099—November 15, 1887.—ARTIFICIAL TOOTH.—Elliott H. Sherman, Grand Rapids, Mich.
- 373,140—November 15, 1887.—DENTAL ENGINE.—William A. Knowles, Alameda, Cal.
- 373,302—November 15, 1887.—ARTIFICIAL TOOTH.—John J. R. Patrick, Belleville, Ill.
- 373,346—November 15, 1887.—ARTIFICIAL TOOTH CROWNS.—George Evans, New York, N. Y.
- 373,347—November 15, 1887.—MANUFACTURE OF ARTIFICIAL TOOTH CROWNS.—George Evans, New York, N. Y.
- 373,348—November 15, 1887.—MANUFACTURE OF ARTIFICIAL TOOTH CROWNS.—George Evans, New York, N. Y.
- 373,682—November 22, 1887.—DENTAL PLIERS.—John J. R. Patrick, Belleville, Ill.
- 373,683—November 22, 1887.—RUBBER DAM AND TAPE HOLDER.—John J. R. Patrick, Belleville, Ill.
- 373,751—November 22, 1887.—METHOD OF MAKING CROWNS FOR TEETH.—John J. R. Patrick, Belleville, Ill.
- 374,122—November 29, 1887.—TONGUE HOLDER FOR MOUTH AND THROAT OPERATIONS.—David Genese, Baltimore, Md.
- 374,221—December 6, 1887.—DENTAL ENGINE.—August Weber, New York, N. Y.
- 374,225—December 6, 1887.—ELECTRICAL DENTAL ENGINE.—George W. Whitefield, Evanston, Ill.
- 374,286—December 6, 1887.—HAND PIECE FOR DENTAL ENGINES.—Frank H. Bell and Ellerson J. Marsh, Dubois, Pa.
- 374,382—December, 1887.—INSTRUMENT FOR FORMING TOOTH CROWNS.—Henry W. Watkins, Worcester, Mass.

# SECOND-HAND AND SHOP-WORN GOODS

## FOR SALE CHEAP.

### MISCELLANEOUS.

- One Lot Jarvis Separators. Will sell for 50 cents each.
- One Lot Johnston Bros. Reflectors, to attach to Rubber Dam Clamps, throwing light into cavities. List price, \$2.75; sell for \$1.50 each.
- One Pair Plate Benders, as shown on page 290 S. S. White's Catalogue. \$1.50.
- One Pair Pin Heading Forceps. \$1.50.
- One Lot Ross Polishing Powder, for polishing Rubber Plates. Put up in 1-pound boxes. Per box, 15 cents.
- One Lot Pin Racks, for Snow & Lewis' Automatic Points. Curved, to hold 18 points, and square, to hold 24 points. Each, 50 cents.
- One Blake's Duct Compressor. \$1.50.
- Aluminum Solder, per  $\frac{1}{2}$  ounce, 50 cents.
- One Lot Bur Gauges, nicely Nickel-plated. Each, 25 cents.
- Plate Tooth Holders, to hold Teeth while grinding. Each, 10 cents
- Blodgett's Tooth Wash. Per dozen, 25 cents.
- One Brass-Bound Mahogany Case,  $16\frac{1}{2} \times 11 \times 4\frac{1}{4}$  inches, as shown on page 212 S. S. White's Catalogue. Without trays. Cost, \$20.00; will sell for \$5.00.
- One Rolling Reclining Invalid Chair, in perfect order. Cost, \$36.00; sell for \$25.00.
- One Codman & Shurtleff Floss Holder. 25 cents.
- One Novelty Microscope. 50 cents.
- One Archer Standard Spittoon, with marble top and glass funnel, in good condition. \$2.50.

### INSTRUMENTS.

- One Johnston Cone Journal Hand Piece, in perfect order. \$7.00.
- One No. 7 Universal Hand-Piece, in perfect order. \$8.00.

### DENTAL BOOKS.

- One Tyson's Cell Doctrine. 75 cents.
- One Huxley's Elementary Lessons in Physiology. 50 cents.
- One Cleveland's Pronouncing Medical Lexicon. 75 cents.
- One Sewill's Dental Anatomy. \$1.12.
- One Sansom on Chloroform. \$1.25.
- One Beale's How to Work the Microscope. \$4.00.
- One Paget's Surgical Pathology. \$4.00.
- One Anatomist's Vade Mecum, Wilson. \$3.00.
- One Carpenter's Human Physiology, 1868. \$3.00.
- One Dunglison's Human Physiology, 2 Vols., 8th edition. \$4.00.
- One Heath's Injuries and Diseases of the Jaws. \$3.00.

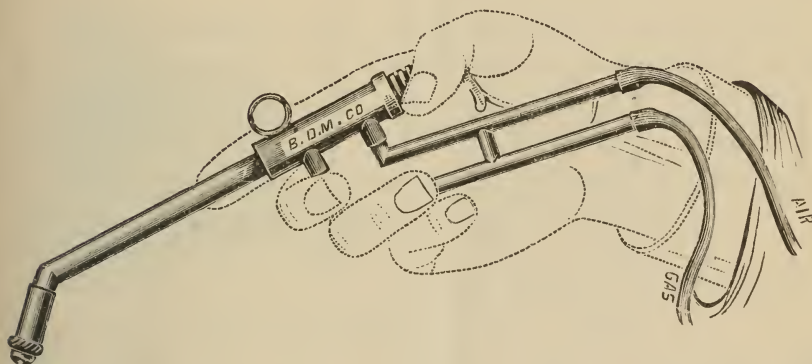
### MACHINERY.

- One Tripod, to hold a 100 gallon Cylinder. \$2.00.
- One Johnston Dental Engine, with No. 7 Universal Handpiece. Used about three months. In perfect order. \$30.00.



# No. 6F. Automaton Blow-pipe

FOR CROWN AND BRIDGE-WORK.



THE illustration shows this blow-pipe one-third size. It is an improved pattern of the Fletcher Automaton, designed especially for use in the dental laboratory, and has been highly commended by several experts in bridge-work to whom it has been shown. It is made of smaller tubing than the No. 6 A or B Automaton, the end being bent at an angle, to give greater facility in directing the flame. The adjustable nozzle is screwed on and off, instead of operating by a slip-joint, as in the other patterns of the automaton blow-pipe. Its length is increased, removing the hand farther from the heat. The supply of gas and air is controlled by a longitudinal movement of the tube, instead of a rotative one. A spring opposes the movement of the hand, and a slight variation of pressure upon the end-piece, when it is held as shown, is sufficient to give either a pointed jet or a full sized brush flame at pleasure. An improved tip is used on the air jet, and the small blue-pointed reducing flame is very easily and perfectly produced.

The gas passage does not close entirely, but allows the passage of enough gas to prevent the flame from going out when the blow-pipe is not in use. It can be hung-up by the ring shown on its body, when it is desirable to get it out of the hand.

With the No. 9 Foot-Blower, this blow-pipe is believed to form the most convenient apparatus for soldering dental plates which has yet been produced. A reducer is furnished with it free of charge, by which the small rubber tubing used with the blow-pipe can be connected with the larger tubing which fits the bellows nozzle.

## PRICES.

No. 6F, Automaton Blow-pipe, . . . . .	\$3.50
No. 9, New Style Foot-Blower, . . . . .	5.00
¼-inch Rubber Tubing, for connection, per foot, . . . . .	.16

Catalogues, containing full descriptions and illustrations of Melting Furnaces and Blow-pipes, suitable for dental purposes, sent on application.

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DR. STOWELL'S

## Atlas of the Microscopic Anatomy of the Human Teeth.

CONTAINING 64 CUTS,

REPRESENTING EVERY TISSUE OF THE TEETH. UNDER HIGH MAGNIFICATION, SOME OF THESE ARE AS HIGH AS ONE THOUSAND DIAMETERS, AND ARE SO PLAIN THAT ANYONE CAN UNDERSTAND PERFECTLY ALL THESE STRUCTURES WITHOUT THE AID OF A MICROSCOPE.

Dr. Stowell's reputation is sufficient to give all the recommendation necessary as to the accuracy of the work ; to say it is absolutely perfect is no exaggeration.

The work shows in beautiful form ( in addition to Dr. Stowell's work ) a number of abnormal teeth from Dr. J. Taft's collection. It is printed on the best of paper and bound in morocco.

The atlas is in the form of a portfolio, measuring 12x16 inches ; some of the anatomical cuts measuring thirteen inches in length. Each cut accompanied with ample description.

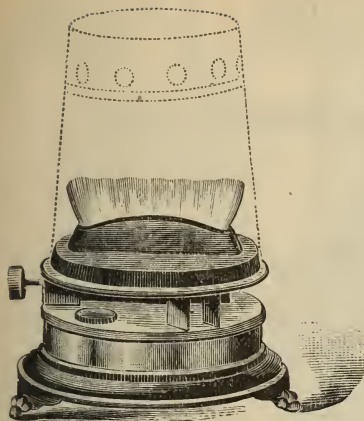
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FOR DENTAL VULCANIZERS.

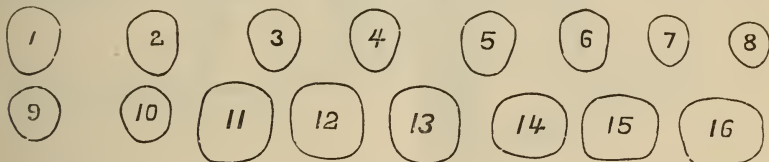


This stove is of our own design, and is especially adapted to vulcanizer work. It has a four-inch wick, and will be found to have ample power. This stove is now furnished with all of our vulcanizers, when ordered "for kerosene," without advance in price. As the size of the jackets varies for different vulcanizers, it is important, when ordering, to state the kind of vulcanizer the stove is to be used with, and its size: whether one, two or three case.

*PRICE.*

B. D. M. Co.'s Kerosene Heating Apparatus, including Jacket, . . . . . \$1.50

## CROWN \* PUNCHES

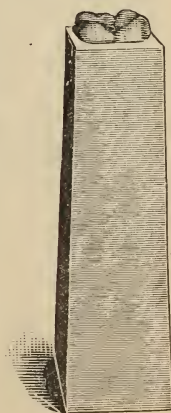


### FOR SWAGING UP CAPS FOR GOLD CROWNS.

They are of hard brass, moulded from well-formed natural teeth. There is a square shoulder just below the cusps of the tooth, making a flat surface, to which the hoop forming the body of the crown is soldered. The dies are numbered, and the schedule below shows the particular tooth each number is adapted to, the diagrams above showing the shape of each crown at its juncture with the flat surface of the punch.

In ordering, specify the number of the punch wanted.

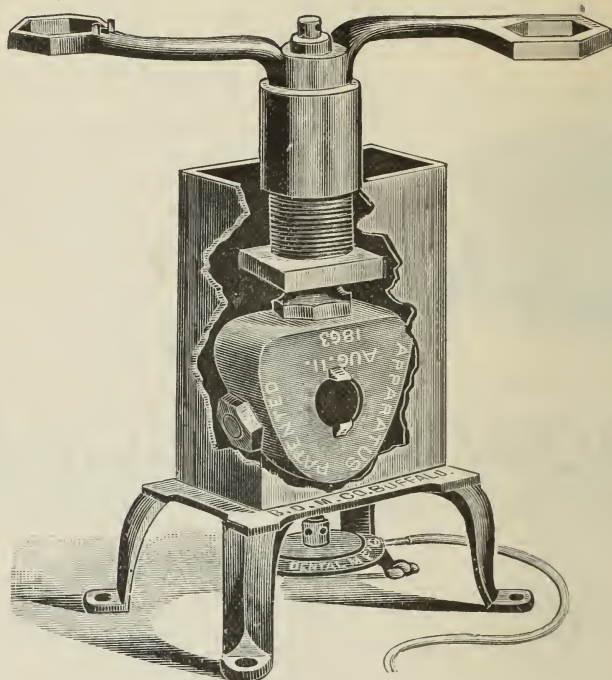
- |                                    |                                     |
|------------------------------------|-------------------------------------|
| No. 1. Right upper bicuspid.       | No. 9. Right lower second bicuspid. |
| No. 2. Left upper bicuspid.        | No. 10. Left lower second bicuspid. |
| No. 3. Right upper bicuspid.       | No. 11. Upper molar.                |
| No. 4. Left upper bicuspid.        | No. 12. Upper molar.                |
| No. 5. Right upper bicuspid.       | No. 13. Upper molar.                |
| No. 6. Left upper bicuspid.        | No. 14. Lower molar.                |
| No. 7. Right lower first bicuspid. | No. 15. Lower molar.                |
| No. 8. Left lower first bicuspid.  | No. 16. Lower molar.                |



*PRICE.*

Crown Punches, each, . . . . . 50 cents.

# The · Howell · Rubber · Packer.



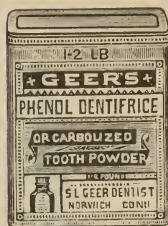
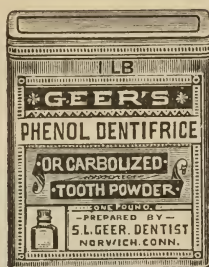
THIS apparatus was brought to the notice of the dental profession, and a number of them sold, some twenty years ago. They are highly esteemed by those who use them and are acquainted with their merits.

In the illustration, the side of the water-bath is broken away, showing the flask and injector in position. The flask is closed, without being packed; and the rubber is contained in the injector, to which the flask is screwed. The apparatus is then put in the water-bath, to which heat is applied. When the water is boiling, the rubber is injected into the flask by means of a piston operated by the screw and wrench, as shown in the engraving.

The advantages of this apparatus are, that a much closer articulation may be secured, and that there is much less risk of breakage of section teeth, when ground thin and set closely against the gum.

PRICES. — Howell Packer, complete, with one Flask and Gas or Alcohol Burner, \$15.00  
Extra Flasks, . . . . . 2.50

BUFFALO DENTAL MANUFACTURING CO.



## Phenol • Dentifrice

OR

### CARBOLIZED TOOTH POWDER.

To maintain the health of the **Mouth** and preserve the freshness and beauty of the **Teeth**, the frequent use of a dentifrice becomes indispensable. It is important to obtain an article free from obnoxious ingredients, the presence of which would surely cause numerous troubles, the origin of which is unsuspected.

The proprietor of Phenol Dentifrice recommends it to the notice of those not already acquainted with its long established merits. This preparation, which has been in the highest repute since its introduction in 1870, and sold to the **dental profession** throughout the **United States** by the leading **Dental Depots**, is a scientific combination of the finest materials, so united, chemically, as to insure the greatest efficiency and the best possible results upon the **MOUTH, TEETH and GUMS**.

The excellence of this Dentifrice, the formula of which originated with the proprietor, a dentist of thirty years' practice, has obtained for it the strongest recommendation of many of the professors in our **DENTAL COLLEGES**, as well as from those most noted in private dental practice.

As a **TOOTH POWDER** for General Use, by Old and Young, it stands Unrivalled.

**\$1.00 PER LB., IN 4, 1, ½ & ¼-LB. CANS**

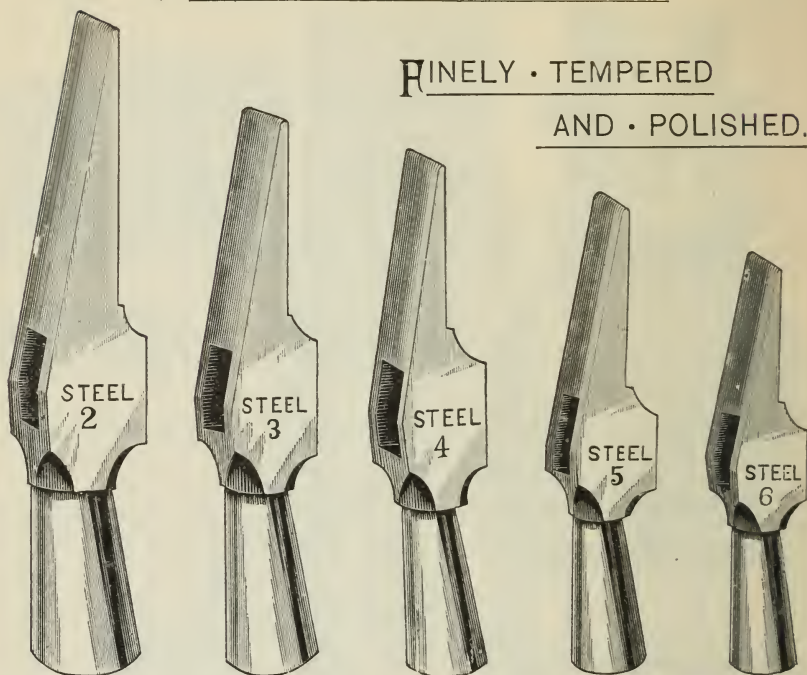
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# ↔ Fine Steel Hammers. ↔

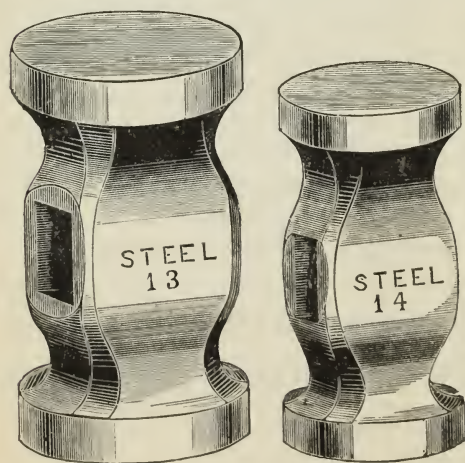
FINELY • TEMPERED

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THESE HAMMERS ARE WITHOUT EXCEPTION THE BEST MADE.

The Prices include an excellent Hickory Handle.

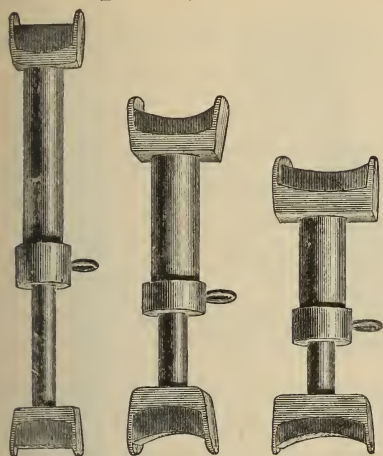


## PRICES.

No. 2 Hammer, each	70	cts.
No. 3       "       "	55	"
No. 4       "       "	55	"
No. 5       "       "	50	"
No. 6       "       "	50	"
No. 13       "       "	1.10	"
No. 14       "       "	85	"



# BICKFORD'S · DENTAL · MOUTH · PROPS.



This new device is intended to take the place of the Wooden Peg, or Cork, to keep the mouth of a patient open while administering Gas, for the Extraction of Teeth, or any operation that requires the teeth kept apart.

It consists of a prop made in the form of a telescope slide, pin and tube, with an enclosed spiral spring, and after being put into the patient's mouth, is held firmly in position against the teeth by the action of the spiral spring, and readily adapts itself to the opening and closing of the jaw. The prop is thus prevented from dropping out, and the mouth is kept open wide enough for any operation.

The outer ends of tube and pin are provided with socket pieces, in which are fitted blocks of rubber, to act as cushions to protect the teeth. They are made of metal, heavily nickel-plated, so that while they possess greater strength than the wooden peg, they are much smaller, and consequently take up less room. Further, they

can be kept clean and bright, and patients do not object to them. The cuts show the three regular sizes, Nos. 1, 2 and 3. No. 1, the longest, for FRONT teeth; No. 2, for BICUSPIDS; and No 3, for MOLARS, or any portion of the mouth that requires a short prop. The props are very easily taken apart and new springs put in when old ones get weak or worn out.

## PRICES.

Each, . . . . .	\$1.00
Per set of three, . . . . .	2.50
Springs, each, . . . . .	.10
New Rubbers, per set of three pair, . . . . .	.10

## A Reliable Work on Anaesthetics,

ESPECIALLY IN REGARD TO

## NITROUS OXIDE GAS.

THE

## ADVANTAGES AND ACCIDENTS OF ARTIFICIAL ANÆSTHESIA:

A MANUAL OF ANÆSTHETIC AGENTS, AND THEIR  
EMPLOYMENT IN THE TREATMENT  
OF DISEASE.

BY LAURENCE TURNBULL, M. D., PH. G.

Second Edition, revised and enlarged. Twenty-seven illustrations.

Price, in cloth, . . . . . \$1.50

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There has been some demand for an endless packing for the Whitney Vulcanizer, and we have at last succeeded in obtaining some, equal in quality and similar in structure to the packing strips commonly used. There are rubber rings sold as endless packing, which are wholly unsuitable for the purpose. These can be relied upon as a good article.

PRICE, . . . 8 CTS. EACH.

# AKRON DENTAL RUBBER.

The material of which this Rubber is composed is prepared by a new process, which insures

ABSOLUTE PURITY,

RESULTING IN A PRODUCT OF  
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DENSITY, FINENESS AND STRENGTH.

It is especially designed to meet the requirements of those who seek to produce the most perfect and artistic work. It is exceedingly tough and light, and takes a beautiful polish. Plates may be made very thin without splitting or crumbling away about the edges. It can be used with the best results for making

PARTIAL LOWER DENTURES, an advantage which no other rubber possesses. It has the unqualified approbation and endorsement of the profession everywhere, and never fails to give satisfaction.

PRICE, \$3.00 PER POUND.

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# MERCURY . . .



Re-Distilled.

The purer the Mercury used in preparing amalgam, the greater the assurance of a successful operation.

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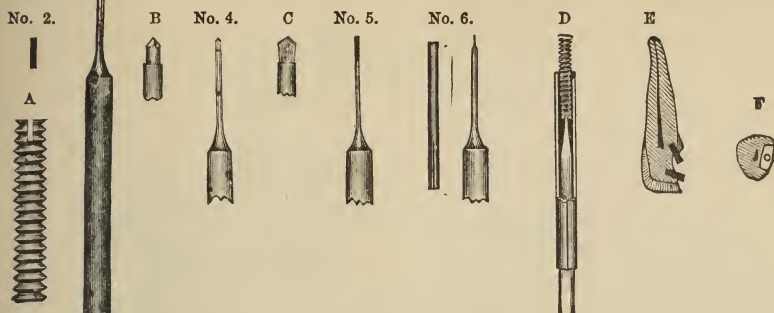
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# No. 1. No. 3. **ANCHOR SCREWS and APPLIANCES.**



Cut No. 1 shows the size of the 18-karat Gold Anchor Screw.  
 No. 2. Iridio-Platinum Anchor Screw, same diameter, but longer than No. 1.

"A." Anchor Screw, magnified to show thread and slot.  
 No. 3. The Starting or Center Drill will form a pit at the exact point desired; but if this point be not at first obtained, the pit center may be moved laterally while the drill is revolving.

"B." Point of Centre Drill magnified.  
 No. 4. Limit or Anchor Drill; will bore only to the depth determined by the limit shoulder—half the length of Screw No. 1.

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 No. 5. Screw-Tap; is probably the most perfectly formed tap of its size that has ever been put on the market, its diameter being only thirty one-thousandths (.030) of an inch.

No. 6. Screw-Driver and Sleeve, which holds the screw for insertion or removal, as shown magnified at "D."

"E" and "F" exemplify the Anchor Screw in gold contouring operations. A drilled and tapped hole to be filled with gold foil serves as a superior retaining point.

See February DENTAL COSMOS, 1887, page 92.

The Handles are made smooth to prevent a breaking twist or the stripping of the threads of dentine by excessive force in turning the tap.

## **PRICES.**

No. 1.	Gold Anchor Screws, . . . . .	each, \$0.20
" 2.	Iridio-Platinum Anchor Screws, . . . . .	" .20
" 3.	Centre Drill, . . . . .	" .25
" 4.	Anchor Drill, . . . . .	" .25
" 5.	Anchor Tap, . . . . .	" .50
" 6.	Anchor Screw-Driver and Sleeve, . . . . .	" .30

The set of Four instruments, . . . . . per set, 1.25  
 Centre Drill No. 3 and Anchor Drill No. 4 are also made for use with engine, . . . . . each, .25

In ordering, state for which hand-piece they are desired.

## **- - - ANCHOR SCREW WIRE. - - -**

In response to frequent inquiries we have now in stock Anchor Screw Wire in two-inch lengths. This wire is the same in diameter and thread as the Anchor Screw, and is exactly suited to the Anchor Tap No. 5, with which nuts may be tapped, and small regulating and other fixtures by these means be easily constructed. Short pieces of screw wire inserted on either side of a vulcanite regulating plate, to pass between molars or bicuspid close to the gum will firmly hold the fixture in place.

PRICE—Anchor Screw Wire, Gold, . . . . . per inch, \$0.50  
 " " " Iridio-Platinum, . . . . . " .40

**THE S. S. WHITE DENTAL MFG. COMPANY,**  
 PHILADELPHIA. NEW YORK. BOSTON. CHICAGO. BROOKLYN.

# Niagara Lathe Head and Stand

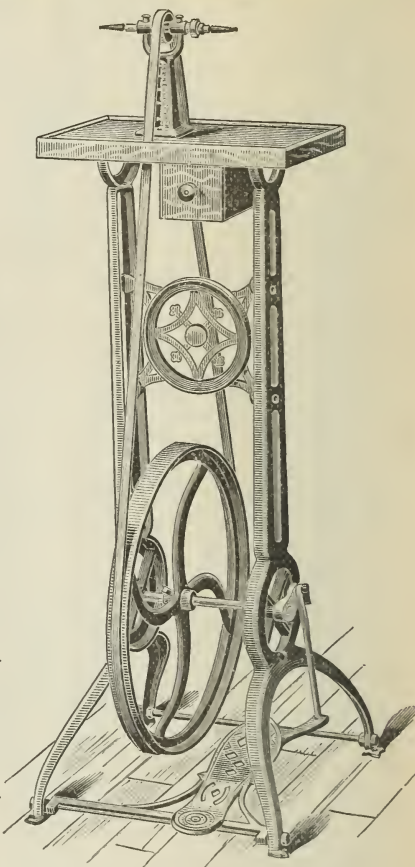
AS there is considerable demand for a dental lathe at a reasonable price, the B. D. M. Co. would call attention to the one illustrated as filling the requirement in every respect.

This lathe has been carefully designed throughout; and while it can be afforded at a less price than many others, it will be found on examination to be of good workmanship, of ample strength, and convenient in use.

The distribution of metal in the stand is such that it is both light and stiff. The head has a taper screw for brushes, a parting-nut for carrying a large wheel, and a split chuck, similar to the one employed on the B. D. M. Co.'s Standard Lathe Head, for carrying pin-chucks, on which corundum wheels can be mounted.

With this lathe can be furnished small corundum wheels, the size of stump-corundums for the dental engine, ready mounted on pin-chucks. These can be used as long as there is any corundum left on the chuck. In fitting teeth to the cast, the small tip of corundum which is left when the wheel is nearly worn out is very useful, enabling the operator to reach points of contact and make a fit which would be impossible with wheels of larger diameter. One size of these corundum wheels,  $\frac{7}{8}$  inch diameter, is now in stock.

The head is provided with a take-up, to close upon the spindle as it wears. Provision is also made for taking up end-motion. It will be seen that all the points necessary for a serviceable dental lathe are covered in the one here described, and the B. D. M. Co. offer it to the profession with the assurance that excellence of workmanship and design will commend it to the buyer as decidedly the best lathe yet produced for the money. This stand can be used with the B. D. M. Co.'s Standard Head.




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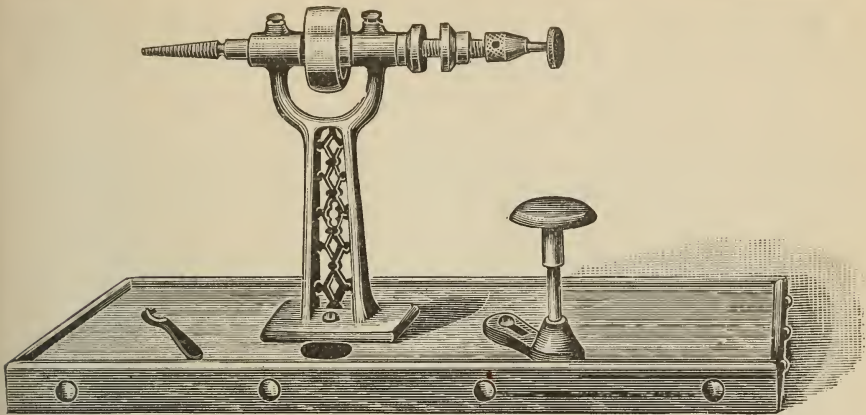
**LATHE STAND AND HEAD - - - ONLY \$11.00**

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Stand only, . . . . .	\$8.00
Head only, . . . . .	3.00
Corundum Wheels, mounted on pin-chucks, each, . . . . .	.25



# NIAGARA · LATHE · HEAD.



THE above illustration represents the table and head of the Niagara Lathe, as sold only by us. It has a split chuck at the end of the spindle, which is operated by the small spanner seen on the table. It carries the ready-mounted corundum wheels, one of which, and a spanner, is furnished with each Lathe Head. The parting nuts will carry a large corundum wheel, and the left hand end of the spindle has a taper screw for brush wheels. The hand-rest is furnished without extra charge when the head and stand are sold complete.

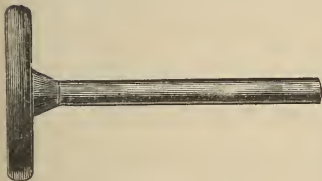
## PRICE.

Niagara Lathe Head, . . . . . \$3.00

BUFFALO DENTAL MFG. CO.

## READY-MOUNTED CORUNDUM WHEELS.

### FOR LATHE HEADS.



These wheels are used with the Niagara Lathe, and the B. D. M. Co. Lathe Head. They are moulded upon a pin-chuck, and can be used as long as there is any corundum left. They are very useful for general work, and when partly worn, are excellent for articulating teeth, or for fitting them closely upon the gum. The facility with which some little depression

is reached with one of these wheels when worn down to a very small diameter, is only appreciated by those who have used them. A single trial only is necessary to convince anyone of their value. One size,  $\frac{7}{8}$  inch diameter, is in stock at present.

A small split-chuck is also illustrated, by the use of which these wheels are adapted to the B. D. M. Co. Lathe Head. A trial of them is earnestly recommended to all using that lathe. The split-chuck goes into the socket in the end of the spindle, and reduces it so that the pin-chuck is firmly grasped.



## PRICES.

Ready-Mounted Corundum Wheels, each, . . . . . 25 cents.

Split-Chucks, for B. D. M. Co's Lathe Head, each, . . . . . 10 cents.



# CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.



<b>GRAY.</b>	<b>YELLOW.</b>	<b>LIQUID.</b>	<b>MEDIUM.</b>	<b>LIGHT.</b>
FOUR COLORS and LIQUID.—Gray, Yellow, Medium and Light, . . \$2.00 per package.				
TWO COLORS and LIQUID.—Gray and Yellow, . . . . . 1.50 “ “				
ONE COLOR and LIQUID.—Gray, Yellow, Medium, Light or Gum, 1.00 “ “				

**THIS COMPOUND STANDS WITHOUT A RIVAL.** Used for TEN years by Leading Dentists throughout the world.

**DIAMOND CEMENT** should not be classed with the so-called oxy-phosphates, as is often the case—the materials of which it is composed and its process of manufacture being entirely different—hence its **Superiority**.

IT HARDENS IN WATER OR SALIVA.—Two or more colors blended together (in mixing) will produce any shade desired.

## • • CAULK'S • PAR • EXCELLENCE • ALLOY • •

This Gold and Platina Alloy is manufactured on a new principle. Saves teeth where others fail. It is the result of a long series of experiments, and has been in constant use for TEN years. By our NEW METHOD of manufacture there is no GUESS WORK, the molecular change is controlled, making each and every ingot always and absolutely alike in its properties.

PRICE, in 1-3, 1-2 and 1 oz. packages, per oz., \$3.00; 2 oz., \$5.00.

## • • CAULK'S • WHITE • ALLOY • •

Has been greatly improved. There is nothing equal or superior to it. Is of a peculiar grayish-white color. When properly manipulated with our Purified Mercury it will retain its color under all circumstances.

PRICE, in 1-4, 1-2 and 1 oz. packages, per oz., \$4.00; 2 oz., \$7.00.

## CAULK'S • DIAMOND • POINT • STOPPING • and • GUTTA-PERCHA • • POINTS • FOR • FILLING • ROOTS • •

PRICE, in 1-8, 1-4, 1-2 and 1 oz. packages, per oz., (reduced to) \$2.00.

All of Caulk's Filling Materials are sold by Troy Weight and sent by Mail.

OVER FIFTEEN THOUSAND Dentists are using these materials throughout the world. What better evidence do you wish of their Superiority and Excellence.

Orders for DENTAL SUPPLIES will receive prompt attention.

L. D. CAULK, Manufacturer,

Office and Salesroom, 1305 and 1307 Arch Street, - - PHILADELPHIA, PA.

Laboratory, CAMDEN, DEL.

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

# Pause, Read, and Act

---

THE truth of the old but trite adage, "The proof of the pudding is in the eating," was never more fully exemplified than by using

## Gideon Sibley's Artificial Teeth,

and carefully noting results.

They need only to be seen to be admired for their beauty and surprisingly truthful imitation of Nature's Ivories, and their use confirms all that is claimed for them as regards superiority in all the essentials that, combined, make the most perfect teeth, both for the practitioner and the patron.

In manufacturing, only the best of materials and the most skillful workmen are utilized ; consequently the cost of production equals that of the highest priced teeth on the market.

## • • • Economy is Wealth • • •

Why pay two dollars for one dollar's worth of goods, quality being equal? Many dentists who are daily using SIBLEY'S TEETH practically answer this question.

### SAMPLE CARDS AND ABRIDGED PRICE LIST

Sent Free of Charge.

---

DON'T TAKE OUR WORD FOR IT, but test these teeth, as others have done, alternating with best makes known to you, and keep a record of breakage, and you will be surprised at the result. . . . .

---

OBSERVE THIS TRADE  MARK ON GUM SECTIONS.

FOR SALE BY ALL FIRST-CLASS DEALERS.

---

# GIDEON SIBLEY,

13th and Filbert Streets, PHILADELPHIA, Pa.

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# THE • LEWIS

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## Combined Illuminating AND Magnifying

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## APPARATUS.

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PATENTED SEPTEMBER 27, 1887.

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THIS apparatus is capable of being used for a number of purposes in dental operations: First. It is an adjustable support for a magnifying glass, relieving the dentist from the necessity of holding the glass to inspect his work, thus leaving both his hands free. Second. When not used for magnifying, the lens can be used to concentrate natural light upon the tooth to be operated on. Third. By the combined use of gaslight, reflector, shield, tube and lens, any dental operation can be carried on after the natural light has proved insufficient, or in the evening; in fact those who have used it, often prefer to darken their operating rooms and work entirely by the illuminator, pronouncing the light much superior to diffused daylight. Fourth. The tube and shield being removed, it affords a very convenient means for illumination during the evening for extraction.

The entire apparatus is suspended from the ceiling by means of a ball and socket-joint—over the left arm of the chair and about its centre—which is so constructed that the ball is clamped sufficiently to retain the depending tube in any position. Sliding telescopically in the tube is a rod carrying arms which support the illuminating and magnifying devices, which are adjusted by the various joints and sliding tubes thereon, enabling the operator to direct the light to any part of the mouth.

When not in use the whole lower part is folded up, so that the arms are parallel with the depending tube, and the whole may be pushed up out of the way.

The joints are so constructed that they are self-sustaining, retaining the apparatus in any position in which it may be placed.

This apparatus has been in use during the past winter, and has been of inestimable value during cloudy days.

Being suspended from the ceiling, the apparatus is entirely out of the way of the dentist; there is not the tremor or unsteadiness which would be manifested if it were applied to the chair.

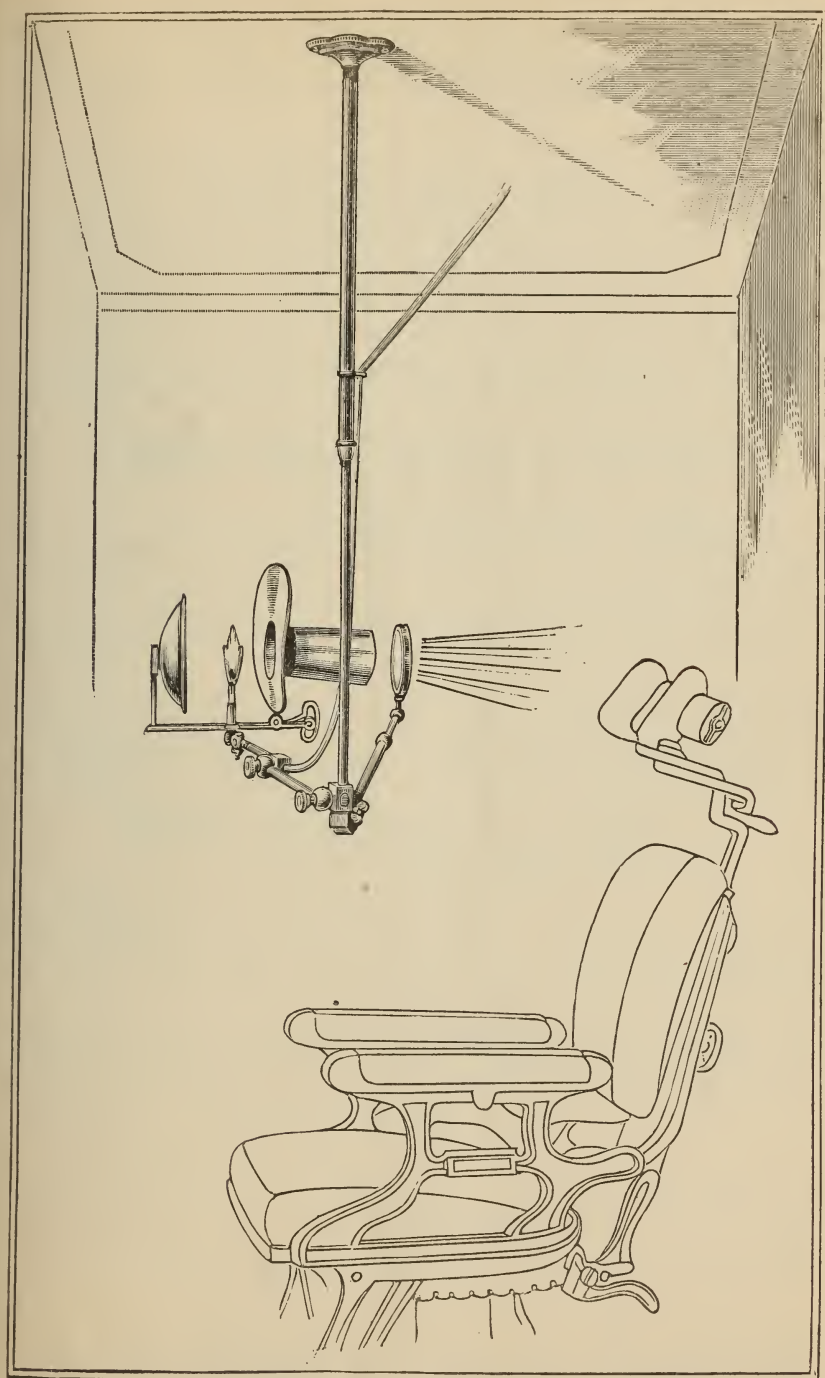
When ordering, state height of ceiling.

A new pattern is now in course of construction for attachment to side wall of operating room.

PRICE: Lewis Illuminating and Magnifying Apparatus, \$25.00.

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THE LEWIS ILLUMINATING AND MAGNIFYING APPARATUS.



# New · Specialties · in · Gold FOR FILLING.

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• • • • •

## SOFT · BURNISH · GOLD · CYLINDERS.

---



Sizes,  $\frac{1}{2}$ , 1, 2, 3, and assorted.

These cylinders are made with particular reference to the new system of packing gold with engine burnishers.

They also have excellent qualities for use with Mallet or Hand Pluggers.

A prominent New York operator says: "As a soft gold they surpass anything I ever used."

## • COHESIVE · BURNISH · GOLD · CYLINDERS ·

---



Sizes,  $\frac{1}{2}$ , 1, 2, 3, and assorted.

Are similar to the above, but are *fully Cohesive*. They also have the quality of toughness, so the *plugger point carries the gold before it* instead of cutting through. It is claimed for them that they possess, in the highest degree so far known, the

## MAXIMUM OF COHESION WITH THE . . MAXIMUM OF SOFTNESS AND TOUGHNESS

---

• • • • •

It is believed these two varieties of Burnish Gold Cylinders possess such desirable and hitherto unobtained working properties, that they are well worth a trial by all first-class operators.

\$4.50 per  $\frac{1}{8}$  oz.—\$17.50 per  $\frac{1}{2}$  oz.

For Sale by  
B. D. M. CO.

R. S. WILLIAMS,  
No. 115 WEST 42d STREET,

NEW YORK  
CITY.



# R. S. WILLIAMS,

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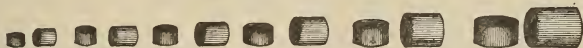
MANUFACTURER OF

STANDARD COHESIVE GOLD FOIL,  
STANDARD MEDIUM GOLD FOIL,  
STANDARD SOFT GOLD FOIL,  
STANDARD CORRUGATED GOLD FOIL,  
STANDARD CRYSTAL SURFACE GOLD (Rolled),  
STANDARD UNTRIMMED GOLD FOIL (Cohesive),  
STANDARD UNTRIMMED GOLD FOIL (Soft).

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## STANDARD • GOLD • CYLINDERS.

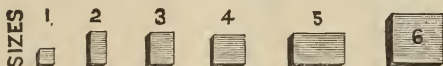
Styles A, B, and C.



NON-TIPPING GOLD CYLINDERS (Cohesive),  
NON-TIPPING GOLD CYLINDERS (Soft),  
BURNISH GOLD CYLINDERS (Cohesive),  
BURNISH GOLD CYLINDERS (Soft).

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## RECTANGULAR • GOLD • PELLETS.



NON-TIPPING GOLD BLOCKS,  
FOLDED GOLD FOIL,  
GOLD and PLATINA, for Filling (Folds and Rolled).

---

ELECTRIC GOLD, (Cohesive)—Always Reliable.

---

STANDARD TIN FOIL and CYLINDERS,  
GOLD LIGATURE WIRE,  
AMALGAM ALLOY No. 1.

---

GOLD PLATE, SOLDERS, WIRE, Etc.,  
PLATINA PLATE and WIRE (Hard and Soft,)

FOR CROWN AND BRIDGE WORK.

---

115 WEST 42D ST., NEW YORK CITY.

[ja88-1y]

# NITROUS THE LEWIS ❦ OXIDE

## GASOMETER.

THE  
 Best and Most Convenient  
 FOR THE PRICE  
 YET PRODUCED.

Made of the Best Galvanized  
 Iron, highly and artistically  
 ornamented. All bright  
 parts nickel-plated.

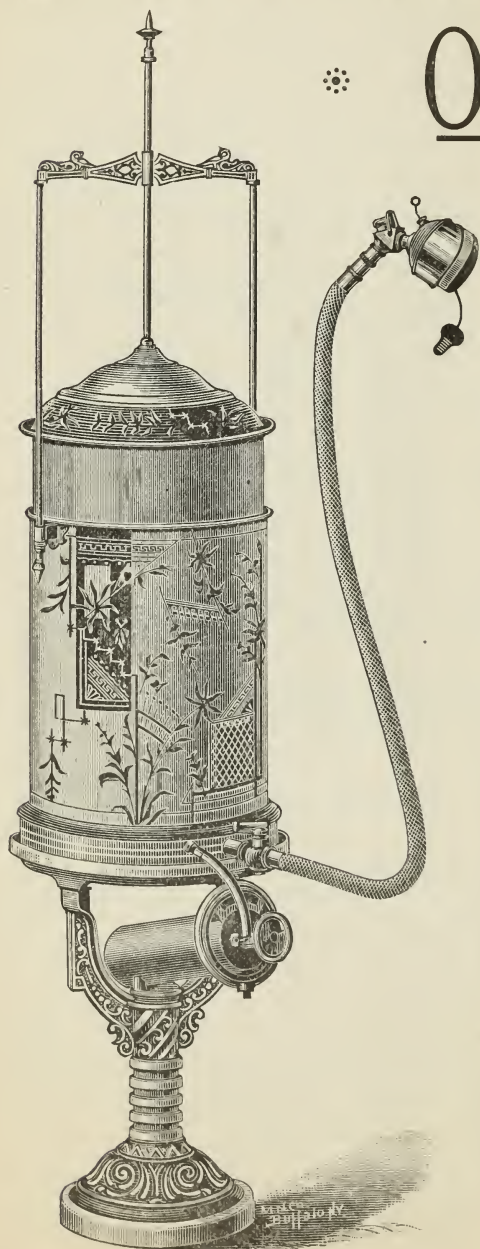
IT IS FITTED FOR EITHER A 100  
 OR 500 GALLON CYLINDER.

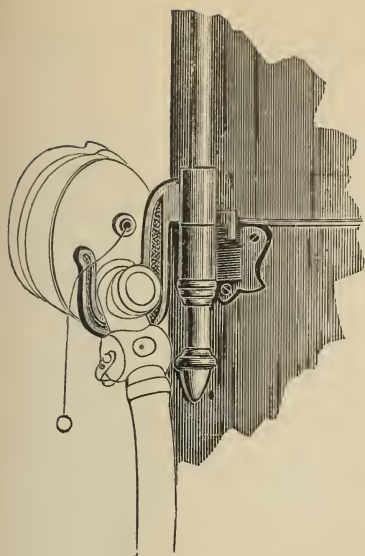
Contains an effective Water Seal.

FOR SALE BY ALL DEALERS  
 IN DENTAL GOODS.

MANUFACTURED ONLY BY  
 BUFFALO DENTAL MFG. CO.,

Court St., corner of Pearl,  
 BUFFALO, N. Y.





## INHALER SUPPORT

FOR ATTACHMENT TO

## Lewis • Gasometer

The cut illustrates a hook to be slipped on one of the upright guide rods of the Lewis Gasometer, for holding the Mouth-piece or Inhaler when not in use. The hook will hold any Inhaler in the market, and can be attached to any gasometer of our manufacture. It will be found a great convenience.

### PRICE.

Inhaler Support, nickel-plated, . . 50 cts.

## NEW STYLES • OF THE • LEWIS GASOMETER

We have the pleasure of presenting to the profession two new styles of the popular LEWIS GASOMETER. The new styles are made entirely of

• • • • • **ORNAMENTED • BRASS,** • • • • •  
LACQUERED OR NICKEL-PLATED.

Either style makes a HANDSOME ORNAMENT IN ANY OPERATING ROOM.

### PRICES.

No. 4 Gasometer, brass, lacquered, . . . . .	\$40.00
No. 5 Gasometer, brass, nickel-plated, . . . . .	45.00

**BUFFALO DENTAL MANUFACTURING CO.**

## NICKEL \* PLATED \* BELL

### FOR LEWIS GASOMETER.

As we have had occasional inquiry for a gasometer of a little better style than our No. 1, we have made a few with the sides of the bell nickel plated. This gives a better finish, and resists the action of the water perfectly.

### PRICE.

No. 3 Gasometer, (No. 1 with nickel-plated Bell,) . . \$34.00

# Darby's • Dental • Capsicum • Plasters

ARE USED AND RECOMMENDED BY

Prof. R. B. WINDER, . . . . . Baltimore.	Dr. W. C. BARRETT, . . . . . Buffalo.
" C. N. PIERCE, . . . . . Philadelphia.	" W. H. ATKINSON, . . . . . New York.
" E. T. DARBY, . . . . . Philadelphia.	" C. F. W. BODECKER, . . . . . New York.
" H. S. GUILFORD, . . . . . Philadelphia.	" J. N. FARRAR, . . . . . New York.

SAMPLES AND DIRECTIONS MAILED FREE, UPON APPLICATION TO

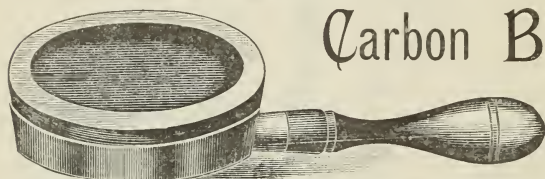
FRANK B. DARBY, D.D.S.,

**80 Plasters for \$1.00.**

126 E. Water Street, ELMIRA, N. Y.

[apr87-1y.]

SOLD AT ALL DEPOTS.



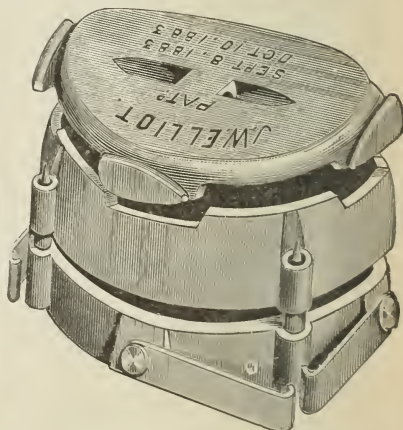
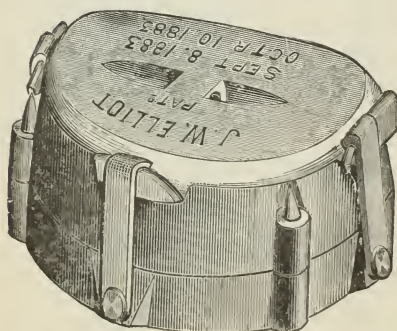
## Carbon Block Holder.

A Very Convenient Device  
For Holding  
Carbon Soldering Blocks.

PRICE: Carbon Block Holder, . . . . . 25 cents. Carbon Block and Holder, . . . . . 50 cents.

# THE • ELLIOT • FLASK.

Patented September 18, 1883.



The clasps swing over inclines or lugs on the cover, and hold the parts of the flask tightly together. The lugs are put below the surface, that the flask may be placed either side up. The guide pins are steel, full size, and parallel, so that the parts are sure to return to place. The flask can be carried when hot by a wire hook, which can be passed through the hole in a section of the cover from the two opposite depressions. (See engraving.) The flask is used for rubber or celluloid.

PRICE: Elliot Flask, brass, . . . . . \$1.50

BUFFALO DENTAL MANUFACTURING CO.



# • FLETCHER'S • AMALGAMS •

• MANUFACTURED • BY •

THOS. FLETCHER, F. C. S., WARRINGTON, ENG.



THE METALS USED IN FLETCHER'S AMALGAMS ARE REDUCED DIRECT FROM THEIR SALTS, AND ARE CHEMICALLY PURE. "COMMERCIAL PURE" METALS ARE NEVER USED. THEY ARE THE ONLY ALLOYS WHICH ARE AND HAVE BEEN, FROM THE FIRST, TESTED INGOT BY INGOT FOR ALL NECESSARY PROPERTIES, AND THEIR UNIFORMITY ABSOLUTELY GUARANTEED. UNTIL THE INTRODUCTION OF THESE ALLOYS, AMALGAMS NEVER WERE TESTED FOR ANY PROPERTIES. THESE AMALGAMS ARE STRICTLY FIRST-CLASS, AND GUARANTEED AS REPRESENTED IN EVERY PARTICULAR. \* \* \* \* \*

## FLETCHER'S PLATINUM AMALGAM

PLATINUM AND GOLD ALLOY, \$4.80 PER OZ.

IS REMARKABLY FREE FROM DISCOLORATION IF FINISHED AND POLISHED. PRODUCES PLUGS ABSOLUTELY MOISTURE TIGHT. DOES NOT DISCOLOR THE TOOTH SUBSTANCE, AND MAY BE RELIED UPON AS A THOROUGHLY TRUSTWORTHY FILLING MATERIAL. REQUIRES A VERY SMALL PROPORTION OF MERCURY.

JAMES V. LEWIS,

GENERAL WHOLESALE AGENT FOR  
FLETCHER'S FILLING MATERIALS  
FOR THE UNITED STATES,

No. 15, COURT STREET,  
BUFFALO, N. Y.

## EXTRA PLASTIC AMALGAM.

AN ADHESIVE VARIETY OF THE PLATINUM AMALGAM,  
\$5.00 PER OZ.

A SMOOTH, EXTREMELY PLASTIC VARIETY, DESIGNED FOR USE IN POSITIONS WHERE THOROUGH PLUGGING IS A MATTER OF DIFFICULTY. IT IS LARGELY USED IN CONNECTION WITH THE ARTIFICIAL DENTINE FOR THE APPARENTLY MOST HOPELESS CASES. FREE FROM DISCOLORATION.

FOR SALE BY BUFFALO DENTAL MANUFACTURING COMPANY.

# SIX WORLD'S FAIR MEDALS

—OF THE—

HIGHEST ORDER OF MERIT AWARDED FOR SUPERIORITY

—AT—

VIENNA, CHILI,  
PHILADELPHIA,  
PARIS, SYDNEY,  
AND  
MELBOURNE,

—TO—

**H. D. JUSTI,**  
IN COMPETITION  
WITH THE BEST MAKERS  
—OF—  
**PORCELAIN TEETH.**



**H. D. JUSTI.**

# REDUCED · PRICE · LIST.

TEETH.	In Lots of	In Lots of	In Lots of	In Lots of	Less than
	\$100.00	\$50.00	\$25.00	\$15.00	\$15.00
Justi Superior and Star Gum Sections...	12c.	12 1/2c.	13c.	14c.	15c.
Justi Plain and New Celluloids .....	8c.	8 1/2c.	9c.	9 1/2c.	10c.

## GREAT REDUCTION IN GAS.

Surgeon Case, complete, with 7-gal. Bag.....	\$39.00.	With 4 1/2-gal. Bag.....	\$	37.75
Universal Tripod, with 4 1/2-gal. Gas Bag and 100-gal. Cylinder, filled.....				32.75
Universal Tripod, with 7-gal. Gas Bag and 100-gal. Cylinder, filled .....				34.00.
Stand, all Japanned, N. P. Cap, 4 1/2-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				34.75
Stand, all Japanned, N. P. Cap, 7-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				36.00
Stand, Japanned Base, N. P. Cap and Casing, 4 1/2-gal. Gas Bag, 100-gal. Cylinder, filled, etc., ..				36.75
Stand, Japanned Base, N. P. Cap and Casing, 7-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				38.00
500-gallon Cylinder .....	\$22.00	100-gallon Cylinder .....		10.00
Refilling 500-gal. Cylinders.....			per gal.	.03 1/2
Refilling 100-gal. Cylinders .....				4.00
Justi Inhaler, Nickel-plated .....	\$8.00	With Flexible Rubber Hood .....		8.50
4 1/2-gallon Bag .....	2.25	7-gallon Bag.....		3.50
Metallic Connections for Gas Bags.....			per set	.50
Morocco Case, with Fittings complete.....				10.00
Union, Nickel-plated, with Connecting Tube.....	\$1.00	N. P. Wrench.....		.50
Stop Cock, Nickel-plated.....	1.00	Wheel Key, Japanned .....		.25
Inhaling Tubing, Worsted Covering.....			per ft.	.50
<b>Justi New Universal Tripod, to hold Cylinders of all sizes.....</b>				<b>5.00</b>
<b>Justi New Universal Cyl. Stand, to hold Cyl. all sizes, N. P. \$9.00, Japanned..</b>				<b>7.00</b>
<b>Justi Flexible Rubber Hood.....</b>	<b>\$1.00</b>	<b>With Metal Connection.....</b>		<b>2.00</b>
Dr. Hurd's Union and Extension .....	5.00	With Chloroform Mixer.....		7.00

Dr. Hurd's Chloroform Mixer will be included with Outfits for an additional price of \$6.00.

Justi Extra Elastic Rubber, in 1/4's, 1/2's and 1s .....			per lb.	2.75
Justi Superior No. 1 Rubber, light, medium or black.....			"	2.25
Doherty, Weighted Rubber, for lower sets .....			"	4.00
Justi Acme Cement .....	per 1/2 oz....	\$1.50	Per oz.....	2.50
Justi Superior Insoluble Cement (four colors to the oz.) .....			per oz.	3.00
Justi Superior Insoluble Cement (two colors to the 1-2 oz.).....			per 1/2 oz.	1.50
Justi Star Gold Foil.....	per 1/2 oz....	\$15.00	In 1/8 and 1/4 ounces.....	per oz. 32.00
Justi Star Tin Foil.....			per book	.40
<b>Justi Superior Gold and Platina Alloy .....</b>	<b>per oz. \$3.00 ; 2 oz. \$5.50 ; 4 oz. 10.00</b>			
Amalgams, King's, Caulk's, or Sterling .....			per oz.	3.00
Stopping or Pellets, Caulk's .....	\$2 00	Chicago Alloy.....	"	4.00
<b>Justi Magnifique Modeling Composition .....</b>			per box	<b>1.00</b>
<b>Justi Improved Hand Socket Holder.....</b>				<b>1.50</b>
Justi Improved Socket Handles for Excavators and Pluggers .....			per doz.	3.00
<b>Justi Socket Handles for Engine Points .....</b>			per doz.	<b>3.50</b>
Justi Socket Plier, Nickel-plated .....				.75
Justi Articulator, No. 0.....	\$0.90	No. 1, Light.....	\$1.75	No. 2, Heavy..... 2.00
Justi Articulator, No. 3, Ball and Socket Joint .....				2.50
Justi Rubber Dam Weight, Nickel-plated.....				.50
Justi Star Rubber Dam Punch.....	\$1.50	Triplex Punch.....		1.00
<b>Universal Cuspador Clamp, adapted to all Dental Chairs.....</b>				<b>3.00</b>
<b>Justi Mouth Prop and Reflector, Silver-plated, Highly polished.....</b>				<b>2.00</b>
<b>Sand and Emery Paper Disks.....</b>			per box	.25
Rubber Dam Holder, Ivory Guards.....	\$1.50	Amber or Horn Guards .....		1.00
Superior Rubber Dam, per yard, thin .....	1.00	Medium.....	\$1.50	Heavy..... 2.00
Cuspador, No. 1, with Gold Catcher .....	4.00	No. 2, with Gold Catcher and Cap.....		1.50
Cuspador, No. 3 .....	2.00	No. 4, with Gold Catcher .....		4.00
Nickel-plated Funnel.....	2.00	Glass Funnel for Cuspador .....		.75

H. D. JUSTI, 1301 & 1303 Arch St., PHILADELPHIA.



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• JUSTI • • • • •

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SUPERIOR

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GOLD • AND • PLATINA

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• • • • • ALLOY • ➤

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IN offering this Alloy to the profession, I can say that it will do all that is claimed for it. It has been largely used by first-class operators and experts who have **thoroughly tested** its **SUPERIOR QUALITIES**, and I have no hesitation in pronouncing it the **best combination of metals extant**, being carefully prepared after long tests and careful experiments; and the fineness of its grain, which makes it so **dense** after being mixed, is greatly due to the **crystallization** of the metals in the **process of its manufacture**.

Its main points are:—**SETS VERY QUICKLY** and can be **finished shortly** after its insertion; has good **EDGE-strength**, good **BRIGHT** color, and is **NON-SHRINKABLE**.

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PRICE:—1 ounce, \$3.00; 2 ounces, \$5.50; 4 ounces, \$10.00

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• • • • • H. D. JUSTI, • • • • •

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BRANCH:  
69 East Madison St., CHICAGO, ILL. 1301 & 1303 Arch St., PHILADELPHIA, PA.

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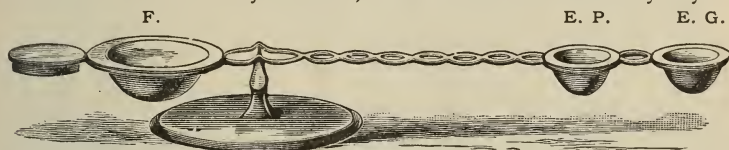


# METHOD OF MIXING Fletcher's \* Amalgams.

PLATINUM and GOLD ALLOY, and EXTRA PLASTIC.

The following method of mixing Amalgams is so simple and faultless in every point that dentists who desire favorable results are urgently solicited to use it exclusively:

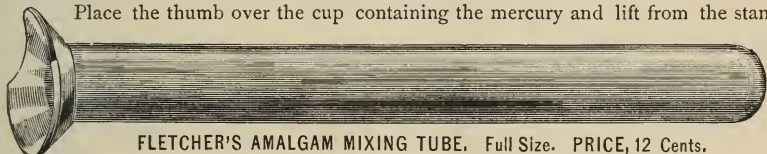
To insure uniformity in the mixture, the FLETCHER DIFFERENTIAL BALANCE is indispensable. The mass is always the same, whatever the nature of the alloy may be.



FLETCHER'S DIFFERENTIAL BALANCE. Full Size. PRICE, 75 Cents.

To use the method, carefully weigh with the differential balance the proportions required, by putting mercury in the cup E. P. for the Extra Plastic Amalgam, or in the cup P. G. for the Platinum and Gold Amalgam, then pouring filings into the cup F., until the mercury is balanced.

Place the thumb over the cup containing the mercury and lift from the stand,



FLETCHER'S AMALGAM MIXING TUBE. Full Size. PRICE, 12 Cents.

pour the filings into the AMALGAM MIXING TUBE, then the mercury, cover the open end of the tube with the finger, and shake briskly for a few seconds. The resulting mass is in the best possible form for working into discs with the CYLINDER MOULD.

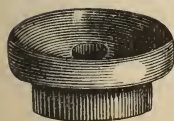


FLETCHER'S CYLINDER MOULD.  
EACH, - - 25 Cents.

Any alloy is greatly improved in its working by this method of mixing, and perfectly uniform results are obtained with the greatest ease. Less mercury is required to obtain firm cylinders, and all is taken up with uniformity throughout the filings, which is *not the case with any other process of mixing known at present.*

The CYLINDER MOULD is an absolute necessity when using dry Amalgams; the pellets being of a convenient shape to be readily carried to the cavity with foil carriers.

*Fletcher's Amalgams must not be washed or made wet; and if excess of mercury is added by accident it must be corrected by the addition of filings, not by squeezing out the mercury, which injures the properties of the alloys.*



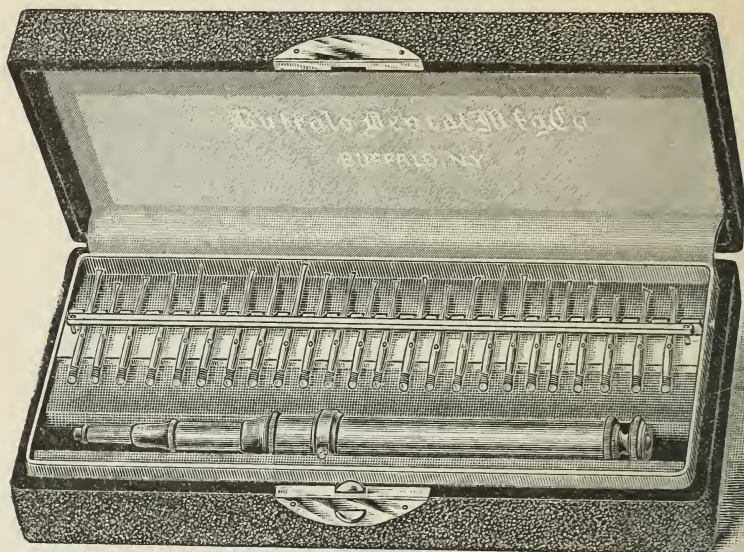
FULL SIZE.

JAMES V. LEWIS,

Gen'l Wholesale Agent for Fletcher's Filling Materials for the United States

No. 15 COURT STREET, BUFFALO, N. Y.

# MOROCCO CASE for the SNOW & LEWIS AUTOMATIC PLUGGER.



## NEW PATTERN OF POINT RACK.

FROM this date, January 1, 1888, the Hayes Rack will be discarded as an adjunct to the Morocco Case for the Snow & Lewis Automatic Plugger, and the Pin Rack will be substituted therefor. The Pin Rack was originally manufactured by The Buffalo Dental Manufacturing Company about twenty years ago. In its original form it was objectionable from the ease with which the points were dislodged from the pins. This difficulty is now obviated by the use of a retaining bar, which presses upon the points, rendering their accidental displacement impossible. As the bar is held down by light springs, it is easily raised when it is desired to remove a point from the rack, or to return one.

The new Morocco Case will be of the same dimensions as the former one, but will hold twenty-four points instead of eighteen.

## PRICES.

Snow & Lewis Automatic Plugger, Silver or Nickel Plated, with Morocco

Case and 24 Plugger points, . . . . . \$17.50

Morocco Case, with rack to hold 24 points, . . . . . 3.50

## STEAM GAUGES FOR VULCANIZERS.



We have a small, neatly made Steam Gauge, as well made and reliable as any steam gauge, having pressure and temperature both indicated upon the dial. The case is three inches diameter.

PRICE—Each, with coil pipe for connection, \$5.00.

BUFFALO DENTAL MFG. CO.

## Endless Vulcanizer Packing.

There has been some demand for an endless packing for the Whitney Vulcanizer; and we have at last succeeded in obtaining some, equal in quality and similar in structure to the packing strips commonly used.

There are rubber rings sold as endless packing, which are wholly unsuitable for the purpose. These can be relied upon as a good article. Price, 8 cents each.

# THE SNOW & LEWIS AUTOMATIC PLUGGER.

Patented October 24, 1865, October 30, November 20, 1866, June 23, 1868, and June 1, 1869.  
Patent of October 30th, 1866, re-issued August 22, 1876, February 2, 1880.

## THE MOST POPULAR AND EFFICIENT DENTAL INSTRUMENT EVER OFFERED TO THE PROFESSION.

This instrument, since its invention in 1865, has been improved from time to time, and has become one of the best known and most indispensable adjuncts to the dentist's operating case. It is now made after two patterns, the old and new style. The "old style" of instrument has

### TWO DISTINCT GRADES OF BLOWS,

one-eighth and one-quarter inch, regulated by means of the ring on the body of the instrument; the finer graduation of the strength of the blow being attained by turning the milled head at the end of the case.

The "new style" embodies an improvement, by which all lateral motion between the socket-piece and its bearings is prevented, and future wear between the parts provided for. This insures

### PERFECT STEADINESS OF THE POINT,

which can now be placed as desired with the same certainty as with a hand instrument. The new instrument has but the one-eighth inch length of blow, which can be varied in strength, as before, by the milled head at the end of the case. By means of the ring on the handle, either of

### THE PLUGGERS CAN BE LOCKED,

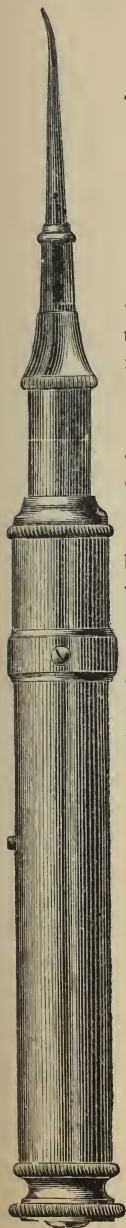
and used as a hand instrument. The above feature is not presented in any other Spring Plugger in the market.

The mechanical devices of the Plugger are protected by patents, embracing all points of any moment applicable to Automatic Pluggers, and we hardly need say that we shall strictly enforce all the rights secured to us therein.

### PRICES.

Automatic Plugger, triple Gilt, No. 1 or 2, . . . . .	\$13.00
Automatic Plugger, Silver or Nickel-plated, . . . . .	9.00
Points, per dozen, . . . . .	3.50
Varney's Points, per set of 13, . . . . .	7.00
Butler's Points, per set of 16, . . . . .	6.00
Enamel Chisels, per set, . . . . .	2.25
Morocco case, with Point Rack, . . . . .	3.50

Points of any desired pattern furnished to order.

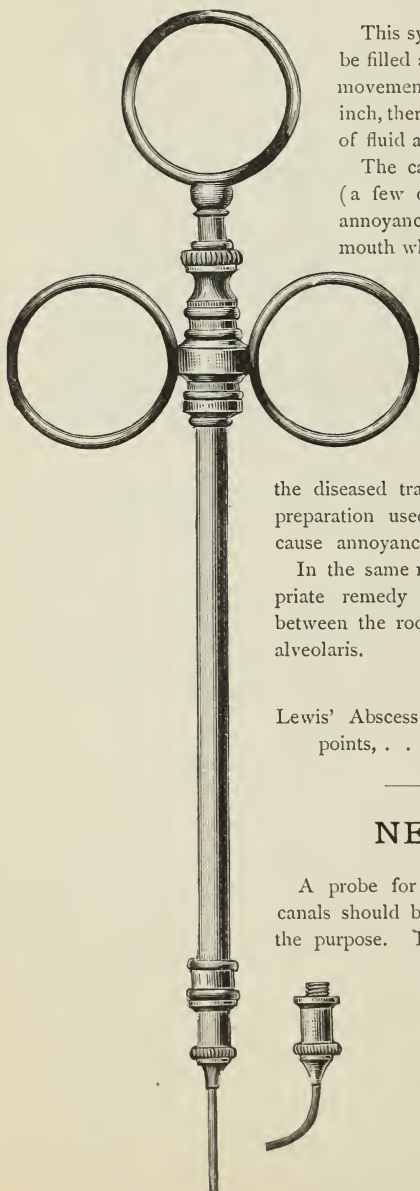




# THE LEWIS ABSCESS SYRINGE

FOR TREATMENT OF

*Alveolar Abscess, Pyorrhœa Alveolaris, etc.*



This syringe is so constructed that it can be filled and operated with one hand. The movement of the piston is but  $\frac{1}{4}$  of an inch, thereby taking up the desired quantity of fluid and no more.

The capacity of the syringe is so small (a few drops only) that it obviates the annoyance of cauterizing the inside of the mouth when using creosote or other strong medicines.

By using a drill of the same size as the syringe point, its whole contents can be discharged into the pulp canal and through the apical foramen and into the fistulous sinus, thoroughly medicating the diseased tract without allowing any of the preparation used to escape into the mouth to cause annoyance to the patient.

In the same manner a few drops of the appropriate remedy may be placed in the pocket between the root and gum in a case of pyorrhœa alveolaris.

## PRICE.

Lewis' Abscess Syringe, with two gold points, . . . . . \$3.50

## NEW PROBE.

A probe for introducing dressings into root canals should be of the right size and temper for the purpose. It should be elastic, yet not so hard as to break, and fine enough to carry cotton to the end of the canal. The one illustrated is made of piano wire, which combines elasticity and toughness in a surprising degree.

## PRICE.

Piano Wire Probe, each, . . 25 cents.



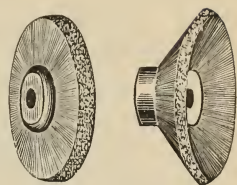
# TOOTH \* BRUSH \* WHEELS.

WITH METAL CENTER.

Endorsed by Dr. J. H. McKELLOPS,

ST. LOUIS, MO.

Made in two shapes—Straight and Concave—of Pure Hair.



PRICES: { No. 0, soft straight, . . . . . } 25 cents each.  
 { No. 1/2, stiff straight, . . . . . }  
 { No. 00, soft concave, . . . . . }  
 { No. 1/4, stiff concave, . . . . . }

BUFFALO DENTAL MANUFACTURING CO.

## BROACH \* HOLDERS!



Bone handle, German silver trimming. A very neat instrument for the purpose. A split socket and clamping nut holds the broach firmly, while it is readily removed, if desired.

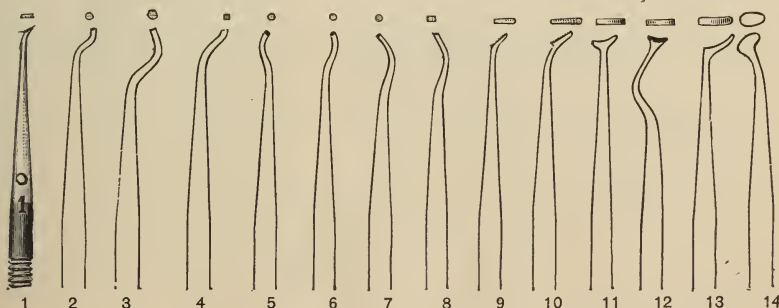
Price, only - - - - 15 cents.

## SET "L"

A NEW SET OF SHORT POINTS FOR THE

Patented August 22, 1876.

SNOW & LEWIS AUTOMATIC PLUGGER



PRICES SET "L" AUTOMATIC PLUGGER POINTS.

Nos. 1, 2, 3, 5, 6, 7, 13, 14, each, . . . . . \$0.50  
 Nos. 4, 8, 9, 10, 11, 12, each, . . . . . .75  
 Per set of 14, . . . . . 8.50  
 Snow & Lewis or Abbott Automatic Plugger Points, per doz., . . . 3.50

# IF YOU WANT

FORCEPS—CORRECTLY MADE,  
EXCAVATORS—KEEN CUTTING AND WELL TEMPERED,  
PLUGGERS—ALL KINDS, FINELY SERRATED,  
AMALGAM INSTRUMENTS—EVERY KIND,  
BONWILL ENGINE PLUGGER POINTS,  
ELECTRIC MALLET PLUGGERS,  
AUTOMATIC PLUGGER POINTS PROPERLY FITTED,  
ENAMEL CHISELS THAT WILL DO THEIR WORK,  
RUBBER DAM FORCEPS AS THEY SHOULD BE,  
FOIL CARRIERS—ALL KINDS,  
ENGINE BURS—BEST QUALITY, OR  
REPAIRING CAREFULLY ATTENDED TO,

SEND TO

## LUKENS & WHITTINGTON,

**DENTAL INSTRUMENT MANUFACTURERS.**

626 RACE STREET, - - PHILADELPHIA, PA.

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See Advertisement of Our . . . . .

## NEW · DENTAL · LATHE

THE FASTEST SELLING LATHE IN THE  
MARKET. EVERYBODY LIKES IT.

Complete, only \$11.00

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## Low's Counter-Irritant Dental Plasters.

The application of counter-irritants to the gum, in the form of a plaster, has some advantages over the ginger or pepper bag, as the plaster can be made to adhere to the gum, and is less bulky. It will, therefore, easily retain its place, and the effect will be more prompt and certain, the action of the remedies not being interfered with by a constant wash of saliva.

It is questionable if one degree of stimulation should be expected to answer the purpose equally well for all stages of pericemental inflammation, and in order to meet the varying indications which are presented, three different plasters have been devised, as follows:

PLASTER No. 1 is a very mild stimulant, suitable rather for warding off threatened inflammation, than for reducing it when present. It is recommended for use after filling pulpless teeth or setting artificial crowns.

PLASTER No. 2 is a more rapid stimulant, composed of capsicum, and is applicable to all cases when it is desired to bring about resolution instead of hastening suppuration.

PLASTER No. 3 is a Mustard Paste, and is by far the best application when suppuration is inevitable and the desire is to hasten the discharge and relieve the patient.

Each bunch of six plasters is wrapped in tin-foil to prevent deterioration by exposure to the air, making a convenient package for the patient.

They are put up in boxes containing nine dozen of either kind or assorted. Price, \$1.00 per box.

Prepared by DR. F. W. LOW, Buffalo, N. Y.

BUFFALO DENTAL MFG. CO., General Wholesale Agents.

# CHLOROFORM MIXER

FOR ATTACHMENT TO LEWIS GASOMETER OR  
OTHER NITROUS OXIDE APPARATUS.

A New Appliance for Administering  
Mixed Anæsthetics.



Patented  
February 24, 1885.



# Snow's · Saliva · Ejector.

Pat. March 12, 1879



"STANDARD" STYLE, WITH THE  
ROLLINS EXHAUST BOTTLE.

Cleanly, · Efficient, · Noiseless · in · Action.

Can be Used Without a Water Supply.

This apparatus has lately been improved by the addition of the Rollins Exhaust Bottle, suggested by Dr. W. H. Rollins, of Boston. This is shown in the illustration as connected with the Standard Ejector, but it is equally applicable to the Wall Pattern. The bottle is placed under the chair, the ejector exhausting the air therefrom, and the saliva descends directly into the bottle, where it remains: the air passing over with it from the ejector.

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ired



# THE · COOLIDGE · GAS REGULATOR

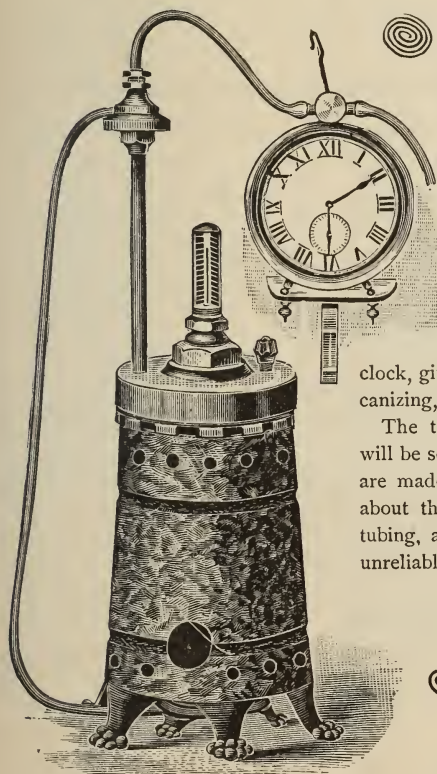
FOR DENTAL VULCANIZERS.

[Patented October 31, 1871.]

FOUR · YEARS · OF · CONTINUED · USE · PROVES · ITS · VALUE.

IT RELIEVES THE DENTIST ENTIRELY FROM THE  
CARE OF THE VULCANIZER, AND WILL BE FOUND A

PERFECT SAFEGUARD AGAINST EXPLOSIONS.



Being operated by steam pressure, it is more sensitive and accurate in its operation than the thermometer, which is operated by the conduction of heat through the body of the vulcanizer. As a consequence, it secures *superior and uniform results in vulcanizing.*

It will pay for itself many times over in the freedom from care, in the immunity from dangerous explosions, and in the time it gives the operator for the performance of other duties.

The cut-off valve is operated by the clock, giving complete control of the time of vulcanizing, as well as the temperature.

The two devices are wholly independent, as will be seen by reference to the illustration. They are made entirely of metal. No rubber is used about them in any form, except as connecting tubing, as experience has shown it to be wholly unreliable.

## CATALOGUES

GIVING FULL DESCRIPTION OF THE

## Coolidge Gas Regulator

MAILED FREE UPON APPLICATION TO THE

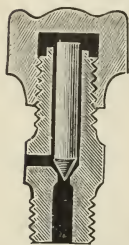
Buffalo Dental Manufacturing Co.

## PRICES:

Coolidge Gas and Time Regulator, with 3 ft. rubber tubing, . . . . .	\$10.00
Gas Regulator alone, . . . . .	5.00
Extra Rubber Tubing, per ft., . . . . .	12 cts.

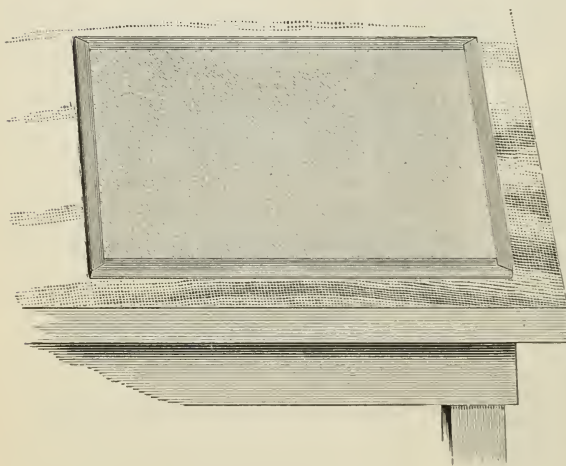
# BLOW-OFF VALVES.

It having been demonstrated that the entire expulsion of air from the vulcanizer forms a necessary condition for insuring the proper action of the thermometer, we have, since January 1st, 1887, provided each vulcanizer with a *blow-off valve*, which is here illustrated in section. The valve is held down by a screw-cap. This "Blow-off" should not be confounded with the "Safety Apparatus," which it resembles in external appearance. It should be opened when heat is applied to the vulcanizer, and allowed to remain open until there has been a free escape of steam for two or three minutes. The air passes out with the escaping steam, and an atmosphere of pure steam in the vulcanizer is secured. The thermometer, under this condition, will always show the same temperature for a certain steam pressure. A variation between the indications of the steam gauge and thermometer of as much as 20° has been noticed when the air was allowed to remain in the vulcanizer. This attachment is applied to old vulcanizers at an expense of one dollar.



BUFFALO DENTAL MANUFACTURING CO.

# ASBESTOS \* PADS.



SUGGESTED BY  
DR. H. H. BOSWELL.

FOR PROTECTING THE TABLE  
WHILE SOLDERING.

These are made from Asbestos board, about one-fourth of an inch thick, and edged with tin. They are incombustible, and excellent non-conductors of heat. The advantages to be derived by their use during blow-pipe work are too obvious to need further explanation.

## PRICES.

No. 1, Asbestos Pad,	6½ in. × 10 in. × ¼ in. thick	each	\$0.50
No. 2, " "	10 in. × 13 in. × ¼ in. "	"	.85
No. 3, " "	13 in. × 20 in. × ¼ in. "	"	1.50

# SAMSON RUBBER

MANUFACTURED BY

EUGENE DOHERTY,

Nos. 417 & 419 Kent Ave., Brooklyn, E. D., New-York.

WARRANTED TO BE

THE STRONGEST AND MOST UNIFORM RUBBER MANUFACTURED.

It is the **TOUGHEST** and Most Durable Rubber Made. Vulcanizes same as Ordinary Rubber.

**SAMSON RUBBER.**



TO DENTISTS,  
IN LOTS OF  
TEN POUNDS  
AT ONE TIME,  
10 PER CENT. OFF  
RETAIL PRICE.

MANUFACTURER OF ALL KINDS OF

## DENTAL RUBBERS AND GUTTA PERCHAS.

### PRICE LIST OF DENTAL RUBBERS AND GUTTA PERCHAS.

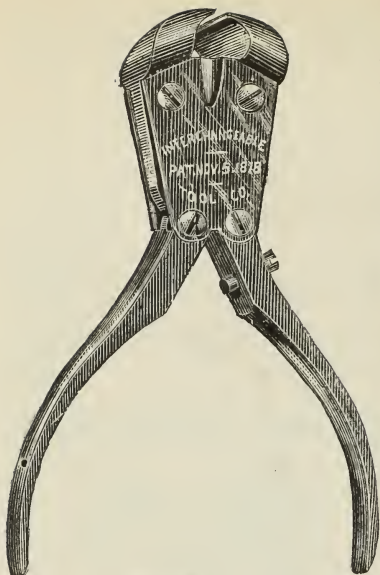
No. 1 Red Rubber, per lb., . . . . .	\$2.25	No. 1 Red Weighted Rubber, per lb.,	\$4.00
No. 2 Red Rubber, per lb., . . . . .	2.25	No. 2 Red Weighted Rubber, per lb.,	4.00
Samson Rubber, per lb., . . . . .	2.75	Black Weighted or Amalgamated	
Black Rubber, per lb., . . . . .	2.25	Rubber, per lb., . . . . .	4.00
Flexible or Palate Rubber, per lb., .	2.75	Weighted Gutta Percha, per lb., . .	4.00
Gutta Percha for Base Plates, per lb.,	2.25	Adamantine Filling or Stopping, per	
Vulcanite Gutta Percha, per lb., . .	3.50	oz., . . . . .	4.00

NOTE.—The above Rubbers and Gutta Perchas will be furnished in pound or half-pound packages to any Dentists in the country on receipt of price, and stating that they cannot get them at the Dental Depots in or near their place of business. Circulars giving full instructions how to use all of my Rubbers and Gutta Perchas, will be found in each box or package with the article ordered.

EUGENE DOHERTY, 417 & 419 Kent Ave., Brooklyn, E. D., New York.

[Oct86-1y]

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.



## HALL'S PATENT CUTTING NIPPERS

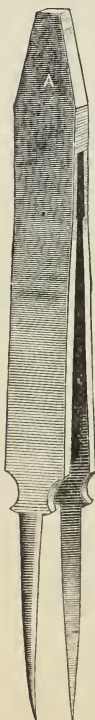
These Nippers are constructed with compound levers, which greatly increase their power and ease of operation. They are of first-class workmanship, strong, durable, and all the parts interchangeable. Extra jaws can be supplied in the event of breakage.

### PRICES.

No. 1	size, 4-in.	Nippers, each,	. . \$1.00
No. 2	" 5 in.	" "	. . 1.20
No. 3	" 7 in.	" "	. . 1.75
No. 1,	Nickel-Plated,	. . . . .	1.25
No. 2,	"	. . . . .	1.60
No. 3,	"	. . . . .	2.25

## SAW FRAME.

## TWEEZERS.



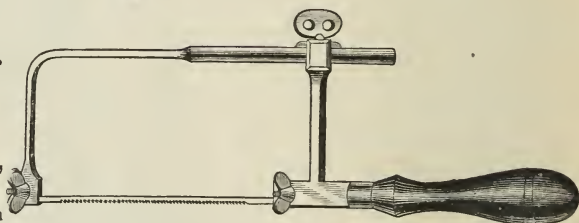
FOR

**SOLDERING,**

With fine slim  
points.

*PRICE.*

Each, . . 25c.



ONE-FOURTH SIZE.

Rosewood handle, finely finished, American make; a better article and much stronger than the Swiss.

### PRICES.

Saw Frame,	. . . . .	\$1.00
" "	Nickel-Plated,	. . . . . 1.25

## FINE FRENCH FILES.

THE BUFFALO DENTAL MANUFACTURING CO. keep in stock a large and varied assortment of fine French files of all sizes, lengths, shapes and cuts. These files are first-class in every respect, and are suitable for gold plate work, or fine brass and steel work.

## TWIST DRILLS, AND DRILL CHUCKS.

of all sizes. Special sizes made to order.

## SOLID-DRAWN BRASS ROD.

from one-fourth inch to seven-eighths inch diameter, any length. Brass Tubing of all sizes. Prices of the above on application.



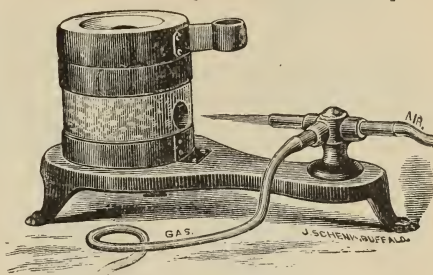
## No. 40. FLETCHER'S NEW CRUCIBLE FURNACE.

Owing to the discovery by Mr. Fletcher of a singularly perfect non-conducting furnace casing, we are enabled to produce the first really simple gas furnace ever constructed. This material is only about one-sixth the weight of fire clay, and has not one-tenth its conducting power for heat. The casing holds the heat so perfectly that the most refractory substances can be fused with ease, using a common foot blower. Half a pound of cast iron requires from 7 to 12 minutes for perfect fusion; the time depending on the gas supply and pressure of air from the blower. The crucible will hold about 10 ounces of gold.

The power which can be obtained is far beyond what is required for most purposes, and is limited only by the fusibility of the crucible and casing.

An ordinary  $\frac{3}{8}$ -inch gas supply pipe will work it efficiently. About 10 cubic ft. per hour is sufficient for most purposes.

Crucibles must not exceed  $2\frac{1}{2}$  by 2 inches. The No. 9a bellows will operate the furnace satisfactorily.



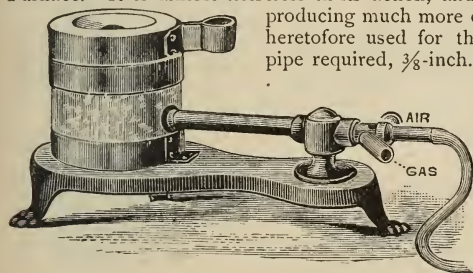
No. 40. Patented Sept. 24, 1878.

### PRICES.

No. 40, Fletcher's New Crucible Furnace, without Blower, . . . . .	\$3.50
Plumbago Crucibles, No. 00, each, . . . . .	.20
No. 40, extra Furnace Body, . . . . .	.75
No. 40, extra Furnace Body and Cover, . . . . .	1.10
No. 40, Burner only, . . . . .	1.50
No. 40, Stand, less Burner, . . . . .	.90

## No. 40a. CRUCIBLE FURNACE WITH IMPROVED GAS BURNER.

This burner is made of the same pattern as that used with the "Perfected" Injector Furnace. It is almost noiseless in its action, and works with a very small gas supply, producing much more economical results than any gas burner heretofore used for the purpose of heating furnaces. Gas pipe required,  $\frac{3}{8}$ -inch.



No. 40a. Patented Sept. 24, 1878.

### DIRECTIONS.

Turn on full gas supply, light the gas, connect the blower with the air way full open, work the bellows and then put the gauze nozzle of the burner tight up against the casing. The air supply should be such that a flame will play out of the hole in the cover, and it may be adjusted by turning the thumbscrew on the side of the burner.

The amount of air and gas used by this burner is very small. Care should be taken that the right proportion of each is used. A steady blast of air will give the best results. The No. 9a bellows, new style, is recommended for this furnace.

### PRICES.

No. 40a, Perfected Burner, without Blower, . . . . .	\$4.50
Extra Burner, . . . . .	2.50

For prices of other parts, see No. 40, above.

## CRUCIBLE TONGS.

Malleable iron, a very neat pattern. They are suitable for handling dental flasks.



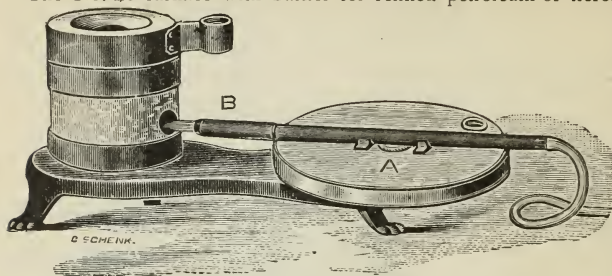
### PRICES.

No. X, 12-inch, . . . . .	50 cents.
No. X, 17-inch, . . . . .	60 "

In ordering, denominate as No. X 12 or No. X 17.

## No. 40b. CRUCIBLE FURNACE FOR REFINED PETROLEUM.

The No. 40 furnace with burner for refined petroleum or kerosene. For the use of



No. 40b. Patented Sept. 24, 1878. June 1, 1880.

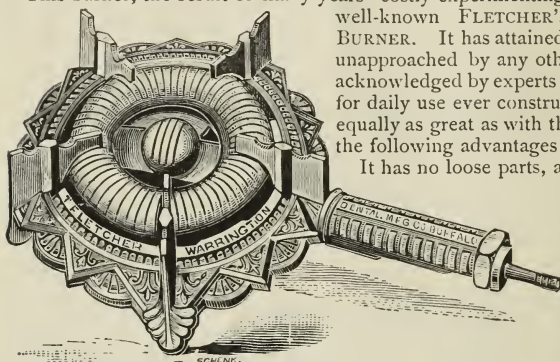
dentists who are not within reach of gas supply. This is fully capable of furnishing all the heat required for melting gold, and will be found to be very easily managed. For full description, see B. D. M. Co.'s "Fletcher" list. The same bellows is used as for the No. 40a.

### PRICES.

No. 40b, Crucible Furnace for Kerosene, without Blower, . . . . .	\$5.00
No. 9a, Foot Blower, new pattern, . . . . .	6.00
Plumbago Crucibles, No. 00, each, . . . . .	.20
No. 40b, Petroleum Burner, . . . . .	3.00

## Nos. 1 and 2 R. FLETCHER'S RADIAL BURNERS.

This burner, the result of many years' costly experimenting, is an improvement on the well-known FLETCHER'S PATENT SOLID FLAME BURNER. It has attained in England a sale probably unapproached by any other burner ever made. It is acknowledged by experts to be the most perfect burner for daily use ever constructed. The duty obtained is equally as great as with the Solid Flame Burner, with the following advantages:



Patented Jan. 1, 1884.

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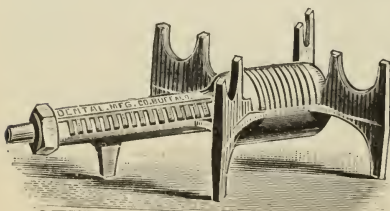
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## IMMEDIATE ROOT-FILLING.

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BY DR. FRANK W. LOW, BUFFALO, N. Y.

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(Concluded from page 9, January Number.)

May not the lack of confidence in the ultimate success of immediate root-filling, on the part of those who so strenuously object to the process, be justly attributable to an erroneous conception of the true pathology involved in the treatment of this class of cases? The *untenability* of the grounds of their opposition is at least clearly evinced in that they have so frequently relinquished them. Beginning with the sweeping statement that whenever septic matter had once found ingress to a pulp canal its filling without prolonged treatment was, in any case, an unsafe procedure, they have abandoned each successive negation until at present we are only accused of temerity in thus treating cases of abscess without fistula.

The erroneous deductions, vaguely held by many and arrived at they know not how, are most concisely voiced in a recent editorial in the *Independent Practitioner*, in which it is said that "the products of infection are frequently infiltrated into the tissues" about the tooth, "and that it is impossible in many instances to know when the whole is made entirely aseptic." On the contrary, we believe that the products of infection are confined within the pulp canal, the dentinal tubuli, and the pulp sac—if one be present; that if these be thoroughly flushed with peroxide of hydrogen, followed by bichloride of mercury solution, the pulp canal carefully dried, and securely sealed, we may safely trust "dame nature" to be her own physician, even though we cannot comprehend what we are pleased to term her process of repair. When septic matter manifests

its presence at the "apical space,"\* by irritating the peridental membrane, the only *infiltration which really takes place* into its tissue is from the dental pulp branch of *the delicate arterial twig* which here bifurcates. As soon as the lymph finds its way through the walls of this artery, it comes at once in contact with the micro-organisms present, resulting in that "most frequent of all the degenerations of lymph"—"the entirely unorganizable or *aplastic* product known as *Pus*."† The proliferation of these pus corpuscles is usually so rapid that it chokes the debris back into the constriction of the pulp canal, and thus closes the only avenue of escape.

As the accumulation continues to increase, the peridental membrane is crowded apart and pulled up from the apex of the root to make more room, and soon degenerates from normal tissue into a lower form of areolar connective tissue, which we recognize as the "pus sac." Through the walls of this "sac" it is impossible that septic matter should be infiltrated, its very formation being the precaution taken on the part of nature to erect a *dam* around a circumscribed territory, to prevent the infiltration of septic matter into the tissues adjoining. In the light of all recent pathology it seems impossible to accept the theory advanced to make tenable this *supposed* "infiltration;" namely, "that the 'pus sac' is not organized tissue at all, but merely plastic exudate (scab)."‡

Coleman says of the second stage of peridontitis, "We get a rapid cell proliferation at the spots of chief irritation."§

Wedl says, "When an abscess of the periosteum at the extremity of the root" forms, "one side of the alveolus undergoes complete resorption *from the proliferation of the connective tissue cells in the wall of the abscess*;" also, "It is lined with a membraniform layer of connective tissue."||

Salter says that the sac of an abscess "sometimes remains as a serous cyst, even after the extraction of the tooth upon which it originally depended;" that he has "found it necessary to remove a portion of the wall of the cyst when it granulated from the interior and was obliterated."\*\*

\* *American System of Dental Surgery*, Vol. I., page 918 and figure 484.

† *Carpenter's Human Physiology*, § 375.

‡ "The depressed vitality of inflamed tissue is shown in the tendency to degeneration which it impresses on the exuded product, \* \* \* its development takes place according to a lower or degraded type. \* \* \* The normal product of the organization of either fibrinous or corpuscular lymph is undoubtedly closely allied to the ordinary areolar or connective: it is of this that false membranes and adhesions are formed and that the material of most thickenings and indurations of parts is composed."—*Carpenter's Human Physiology*, § 374.

§ *Coleman's Dental Surgery and Pathology*, page 240.

|| *Wedl's Pathology of the Teeth*, pages 224 and 225.

\*\* *Salter's Dental Pathology and Surgery*, page 241; also see illustration, page 236.

The mere appearance of the pus sac as it is presented to the naked eye, satisfies even the most casual observer that it is at least organized tissue.

In order to show what would be the result to the bone of the jaw and to the muscular tissue of the face did this infiltration, as supposed, really take place, it is only necessary to quote again from Carpenter\* a paragraph which proves, beyond doubt, that instead of one center of pus formation there would be a general diffusion of it; that the whole face would become involved; that breaking down of the tissue would result with that rapidity exhibited in cases of phlegmonous suppurative erysipelas. In fact there would be no such thing as chronic abscess, and any inflammatory action accompanied by the production of pus would be a matter of the most serious moment, involving, as it would, the infiltration of the tissues. On the contrary, we know that cases of pus infiltration are rare; that in most cases it is confined, when produced, within narrow limits, and that the well known constitutional effects produced by its absorption are seldom recognized. If it be the fact, however, that the septic germs are confined to the pulp canal, dentinal tubuli and pus sac, it becomes only necessary to inject into this territory the peroxide of hydrogen† in order that it may be rendered perfectly aseptic.

The method employed by the writer in the treatment of this class of cases is subjoined—not with the expectation that it will be found better than all others, but in the hope that even as he has borrowed many ideas from neighbors, who never will miss them, so in turn he may lend unawares, if for no other reason than “just for conscience sake.”

To begin with, then, some effective means must be adopted for the exclusion of saliva from the entire vicinity of the operation (the use of the rubber-dam being, when practicable, always preferable). This precaution not being taken, bacteria cultures are liable to contaminate either instruments or tooth. If, however, it becomes necessary, in order to bring the pulp canals into view and make them easy of access, to enlarge the pulp chamber or otherwise burr out the body of the tooth, it is quite as well

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\*The conservative nature of the fibrinous exudation and the consequent importance of fibrin as an element of it is well shown by the results of its deficiency. Thus if there be no “sac” formed around a collection of pus, this fluid infiltrates through the tissues; and, by its mere presence, so impairs their nutrition that a corresponding degradation takes place in the character of the plastic material furnished for their assimilation, and hence the purulent effusion spreads without limit, and the tissues through which it percolates undergo rapid degeneration.—*Carpenter's Human Physiology*, § 375.

†Dr. Black, in *American System of Dentistry*, Vol. I., page 948, says of the efficacy of the peroxide of hydrogen in the treatment of abscess: “Since the introduction of the peroxide of hydrogen to the profession by Dr. A. W. Harlan, of Chicago, I have made considerable use of it for the purpose of thoroughly cleansing abscesses, and find it to take a place not filled by any other drug at our command. When introduced into an abscess cavity, oxygen is liberated, producing an expansion of twelve times the volume of the liquid; thus a small amount of the drug will, with its effervescence, expel the contents of a large abscess. It is for this reason especially fitted for cleaning *blind abscesses*, into which a little of the drug may be forced through the root canal.”

to do as much of the engine work as possible before this precaution is taken; both for the convenience of the operator in syringing out chips as well as for the comfort of the patient.

The instruments best adapted for general use, especially in the deeper portions of the pulp canals, are the Donaldson's Spring-Tempered Pulp Canal Cleansers, manufactured by The S. S. White Dental Manufacturing Co. First, because if they penetrate a root in which is present a sloughing and partly disorganized filament of the pulp, they seem to cause less pain than barbed broaches, and are more likely to so engage the fibre as to bring it away entire. Second, in the absence of any sensitive filaments, the debris is removed rapidly, engaging itself in the screw threads of the instrument its entire length, from which it can be readily removed when withdrawn by brushing with an ordinary tooth-brush. Third, because if it is found, when screwed into the canal, that it will not *strip* out—thus bringing its load—it can be safely and easily disengaged by turning to the left, as you would remove any other screw-threaded instrument. Fourth, because the worn-out instruments are of such fine temper that they can be ground on the lathe corundum wheel into four or five-sided broaches, and as such can be utilized to wrap minute shreds of absorbent cotton upon, for the final drying process before the gutta percha cones are introduced. Several of these can be wound, even by an inexperienced assistant, and thus be ready at once for rapid successive introduction just preceding that of the cones.

The penetration of canals will be accelerated by frequent injection of peroxide of hydrogen, because of the expulsion of their contents, (as mentioned by Dr. Black in the preceding foot-note) incident to the effervescence of this compound, as well as its chemical combination with and consequent softening of the products of infection present.

When the instruments have at length penetrated the apex of the root—of which fact you may safely trust the patient to make you aware—it will often be found upon injecting the peroxide solution once more that effervescence (which perhaps just before had nearly or quite ceased) will again manifest the presence of septic matter; this, however, is caused by the pus so often confined in the "apical space," and any further penetration of the broach is contra-indicated. It is not sufficient merely to inject in order to obtain the full benefit of the peroxide in this new territory of infection, but the plunger of the syringe should be worked with a rapid churning motion for several seconds, while the nozzle of the instrument remains as deeply fixed as possible in the pulp canal under treatment, for by this reciprocating motion of the plunger, the fluid is forced beyond the apex of the root and into the infected territory, and thoroughly mixed with any pus which may then be present.

The instrument best adapted for the purpose of thus injecting the



peroxide of hydrogen is the Lewis Abscess Syringe, manufactured by the Buffalo Dental Manufacturing Co. The advantages to be derived from its use are that it can be operated with one hand and the pumping or churning motion above-mentioned be easily accomplished. The capacity of the syringe is so small that the injecting process is prevented from becoming a sloppy one, while at the same time the fit of the plunger is so perfect that the injection is accomplished with considerable force.

When effervescence again ceases—which will be indicated if, upon removal with cotton or spunk of all the “lather” previously made, it is found that further injection produces only such bubbles as may be expected from the confinement of particles of air in any liquid—the canal should be wiped out and an injection of the  $\frac{1}{1000}$  bichloride of mercury solution substituted. It is just possible that the use of the bichloride solution might be dispensed with; but it is the most powerful known germicide, and besides it is just sufficiently irritant to cause the inner walls of the abscess—if one be present—when collapsed, to become obliterated by adhesion.

To facilitate this collapse of the walls of the pus sac, the syringe again comes into use as an aspirator. The use of the dry hot air current is next indicated, and last of all the little broaches wound with cotton shreds. Several of these latter should be used, even though the first one withdrawn appears to be dry, because they are the most perfect exhaust plungers after all. Following their use, the canals should be quickly sealed with gutta percha cones dipped in a thin chloro-percha solution, to facilitate their deep penetration into the canal and at once to varnish them tight to its walls. A moment's wait—which usually is gratefully accepted both by operator and patient—is now advisable in order that the chloroform of the chloro-percha, which, as the cone descends into the cavity of the canal, will be found to have regurgitated, may have an opportunity to evaporate. After wiping this off with spunk or cotton, the cone will be found very soon to be dry; and then it can be condensed a trifle, after which—if the material to be used be other than gold—the crown filling can safely be made at once.

If gold is to be the material used, the operation had better be deferred for a few days, lest the impact of the plugger should cause acute inflammation of the irritable peridental membrane. The writer had an unpleasant experience—referred to editorially in the last issue of this journal—which taught him the necessity of this precaution, and yet he has been obliged on several occasions since to resort to immediate crown as well as root-filling for patients residing out of town, and as yet has heard no report of resulting pericementitis.

The objection raised to immediate root-filling on the ground that the apex of crooked roots cannot be reached by any broach, and that they need protracted medication, is not sustained, for two reasons:

1st. The peroxide *does* penetrate and render them aseptic. Indeed, how can it be doubted when the bleaching of an entire though badly discolored tooth though merely incidental to the root treatment so clearly attests its penetrative power, even in such minute spaces as the dentinal tubuli.

2d. The apex of all root-canals can be reached with the Donaldson Broaches except those of molars, and in those teeth it is usually found that the root which has an alveolar abscess appendage is the root with the largest and most easily penetrable canal.

To claim for immediate root-filling invariable success would perhaps be unwise; but the writer is *aware of no instance* where in his own practice a tooth has been extracted after its performance, or where a chronic fistula has been the result; indeed, should the latter manifest itself as a sequel, he would have recourse to the methods recommended in such cases by Dr. Black in the *American System of Dentistry*; fully expecting to find, as a complication in the case, a deposit of surmeal calculus upon the apex of the tooth. The pathological healing and obliteration of an alveolar abscess he believes to be identical with the adhesions following the absorption of the serous fluid in cases of pleurisy; but, be this as it may, there can be no reasonable shadow of doubt that alveolar abscesses do heal and become at least healthy scar tissue.

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## ROOT MEDICATION.

BY S. ESCHELMAN, M. D., D. D. S., L. D. S., BUFFALO, N. Y.

Read before the Buffalo Dental Society, December, 1887.

Before considering medicaments used to destroy the septic products due to the putrefaction of the dental pulp, which, if not destroyed, produce, by mechanical irritation or septic infection, inflammatory action in the highly vascular tissues which constitute the root membrane, it will be well to consider some of the conditions which make it imperative to treat a putrescent pulp chamber.

Writers usually mention only one point of egress to the peridental membrane for septic matter. I believe such a statement to be faulty, for two reasons: 1st—if such were the case, the mere hermetical closing of the apical foramen would be sufficient to protect the vascular structures surrounding the root; 2d—clinical experience teaches us that such treatment soon receives a vigorous protest from the peridental membrane. Now, this being the case, let us see if the microscopic anatomy of the tooth does not show us another way of access to the peridental membrane. If we

direct our attention to the manner in which the dentinal tubuli terminate, we find that they terminate in three ways: 1st—in loops; 2d—with the spaces of the granular layer; 3d—with the canaliculi of the cementum. We have, therefore, a direct continuation of living matter from the pulp to the peridental membrane, through the dentinal fibres connecting with the cells which occupy the lacunæ and canaliculi of the cementum.

Stowell believes that the dentine and cementum have a regular lymph canalicular system; corresponding in a general way, with the lymph canalicular system of the whole body. He says that neither the dentinal fibres in the dentinal tubuli nor the cells in the lacunæ and canaliculi of the cementum, nor the protoplasmic masses in the interglobular spaces, quite fill the space allotted to them, but leave room for the flow of lymph about them. By admitting that lymph spaces exist in the dentine and cementum, we can easily understand how septic matter,—due to putrefaction,—that is so injurious to the integrity of the peridental membrane, can enter; also why such agents as arsenic will destroy the pulp, when applied to the tooth with a thick layer of intervening dentine.

As to the medicaments which are chiefly used in placing the pulp chamber and its environments in an aseptic condition, I will consider their therapeutic value in meeting the three pathological conditions found in a putrescent pulp chamber; namely, 1st—their power of destroying the products of putrefaction; 2d—their power of destroying the agents of putrefaction, fungi; 3d—their power of coagulating or incorporating themselves with the dead remains of the dentinal fibres.

Regarding the products of putrefaction; sulphuretted hydrogen gas is the only one with which we will have to deal, and we find that the medicaments which act as true deodorants are those that contain chlorine, iodine, bromine, and oxygen, and some of the metallic salts; all of which decompose the sulphuretted hydrogen, forming solid or liquid compounds with it. Deodorants containing metals or bromine are not applicable as disinfectants of the pulp chamber. Only those containing chlorine, iodine and oxygen are useful.

In considering iodoform we include iodine also, as we know that it parts readily with its iodine when in solution, or when exposed to the sun or daylight in the presence of fats, by the application of heat or oxidizing agents, or in contact with blood. Nascent iodine decomposes sulphuretted hydrogen by uniting with the hydrogen, forming hydriodic acid, the sulphur being precipitated. Bichloride of mercury is another medicament which will decompose sulphuretted hydrogen, forming the black sulphide of mercury and hydro-chloric acid.

In peroxide of hydrogen we probably have our best and most elegant disinfectant. It is a very unstable compound, readily yielding its extra atom of oxygen, which proves destructive to sulphuretted hydrogen

gas by its union with the sulphur, forming dioxide, and the elimination of free hydrogen gas. Carbolic acid, creosote, eucalyptus oil and the essential oils have no effects as true deodorants, but accomplish the object, if an opening is left for the escape of sulphuretted hydrogen gas, by virtue of their therapeutic value as medicaments, thus remedying the second pathological condition mentioned, namely, the presence of the agents of putrefaction, fungi. All of the deodorants mentioned, with the exception of peroxide of hydrogen, are antiseptics which stand at the head of their class.

After complete disinfection and sterilization of the pulp chamber and its environments, we come to the consideration of those medicaments which meet the third pathological condition mentioned, namely, those which coagulate or incorporate themselves with the dead albumenoid matter contained in the dentinal tubuli. After having established an aseptic condition, I believe it to be very important to use remedies which will keep the dead matter in the tubuli in an aseptic state, and antiseptics that form insoluble compounds with the dead matter by coagulating the albumen are the remedies to be selected.

Some have objected to the use of remedies that coagulate albumen, on the supposition that the pulpal end of the tubuli becomes closed and does not allow the medicament to penetrate to the terminal ends of the tubuli. Now this is a misstatement, which can easily be demonstrated by coloring carbolic acid with carmine and keeping the pulp chamber of a tooth filled with the acid for a few days; when it can readily be seen that it has permeated the tubuli to their terminal ends.

If we were to reject the medicaments which coagulate albumen we would be obliged to reject nearly all of our best antiseptics; as bichloride of mercury, nitrate of silver, carbolic acid, and chloride of zinc, all coagulate albumen. Iodine and iodoform will not coagulate albumen, but will incorporate themselves with it. Iodoform, while it is one of our best remedial agents in the conditions mentioned, possesses another valuable property in common with carbolic acid that the other medicaments mentioned do not possess: namely, anæsthetic properties; which, in my judgment, give it precedence in the conditions mentioned when complicated with vascular disturbance of the peridental membrane.

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THE VERY SUCCESSFUL way in which French duellists fail to kill each other is now considered to be due to the precautionary measures taken, in dipping the swords in a solution of carbolic acid. How long before cannon balls and bullets will be stored in antiseptic solutions, and the bold warrior will be required to take a sublimate bath before "joining the tide of battle?"—*Southern California Practitioner.*



## THE DIAGNOSIS OF DENTAL CARIES AND ITS SEQUELÆ.

BY A. MORSMAN, M. D., D. D. S., OMAHA, NEB.

Correct diagnosis is conceded by all practitioners to be the initial step to success in therapeutics, and its importance being granted, it is surprising how little it is cultivated among dentists. I do not mean that there are not a great many good diagnosticians among dental practitioners, but that there are many who do not thoroughly appreciate the importance of this first step. It is of almost daily occurrence that we see cases and listen to tales of patients that indicate lack of perception as to what was the matter. Nor can this be accounted for always on the ground that "doctors disagree."

Two things are required in diagnosing a case: first, we must arrive at a correct conclusion; second, we must use such means as will be least unpleasant to the patient. Patients almost always come to us with more or less apprehension, and we can impress them in no way so much as by our expertness in locating their trouble.

"Doctor," said a lady of varied dental experience, "you are the first dentist who ever asked me a question without putting an instrument in my mouth." It is too true, I fear, that many dentists depend almost exclusively upon physical signs, to the discomfort of their patient and their own loss, for very much can be learned from symptoms. A decayed tooth presents, and almost the first thing is an excavator, with which the cavity is entered—carefully, perhaps, but causing fear and discomfort on the patient's part.

Visiting a professional friend one day, a lady called with an aching tooth; he placed her in the chair and introduced an excavator into the cavity—there was a jerk of the head and a cry of pain. The doctor laid aside the instrument and said quietly, as he rolled up a pellet of cotton, "You have an exposed nerve; I will quiet it in a moment." "I could have told you that!" said the lady, and I did not wonder at her indignation.

Diagnosis is by two methods, objective and subjective, or by physical signs and by symptoms. By symptoms is meant those subjective conditions incident to the disease which become perceptible to the patient's consciousness—as pain, heat, chill, lassitude, and the like; by physical signs is meant those changes produced by the lesion, perceptible to the operator's senses—as swelling, redness, hardness, the appearance of pus, or bleeding, and the like. Not only does this include what the operator can see, feel or hear, but also what he may elicit by a refinement of these

senses—as for instance, determining the presence of pus by palpation, the difference between a fatty tumor and a hydrocele, or examination by aspiration or other instrumental means.

The diagnosis of dental lesions is much less intricate than medical diagnosis, and its study is not very difficult. With a view of aiding the beginner, I shall attempt to present the subject in a simple manner. A few general rules may not be amiss.

Do not hurry. Put your patients at ease, if possible, and avoid touching the tooth or using instruments until you have elicited what information you can by other means.

Is there any pain? Has there ever been any pain? What is the character of the pain? What induces it? What aggravates it? Does the tooth ache? Has it ever ached? Has it ever ached at night? Is the ache or pain continuous, or does it occur at regular intervals? Is there any pain in masticating? Is the tooth tender or sore? If food gets into the cavity, does the tooth ache? Do hot or cold drinks produce pain? Has there been a history of “gum boil” or of previous dental operations? How long since the tooth gave trouble? What effect have sweets or acids?

These are a few of the points to be elicited by interrogation. I do not mean that these questions are all to be fired at the patient like a catechism, but they are to be asked as we proceed and as one question seems to lead up to another. We must always ask a question with our minds as well as our lips. By that I mean that the patient’s answer is to be scrutinized. Answers are sometimes made at random, sometimes forgetfully, and sometimes untruthfully. Let the patient understand that you are asking for information, and not for fun, nor sympathy, nor politeness.

Never be satisfied with indefinite answers. The following amusing scene occurred in my office: The patient, an ignorant Irishman, asked me to look at a tooth. “Has the tooth ever ached?” “Oh, it just hurted me a little, wunct or twict.” “Did it ever ache?” “It pained me a bit, but sure I could stand it?” “Pat, do you know what toothache is?” “Indade an’ I do, sor.” “Has your tooth ever ached?” “Well, thin, it did.” “Did it ache hard?” “It kept me awake the night, bad luck to it!” “Does it ache now?” “An’ if it didn’t would I be here?”

Physical signs, when there is the capability to read them aright, are precise and certain indications, but they are not always present, and it is often much more easy and certain to diagnose by symptoms.

Dental caries is not always accompanied by pain. Many cases are painless, even to the end. In these we must depend upon objective symptoms. Remembering the localities where caries is likely to occur will greatly aid us. A mouth-mirror and a fine pointed probe are

essential to an examination. Beginning at the upper third molar, pass successively over each tooth in that jaw, and return in the same manner on the lower jaw. Regard all fissures with suspicion, and press the point of the probe into them their entire extent. If they are perfect, the feel of the enamel is easily recognized. Approximal surfaces should be closely scrutinized. A bit of floss silk drawn between the teeth will sometimes indicate, by catching, that the teeth should be separated and further examination made. White, opaque spots are almost pathognomonic. After a little practice the eye will never be deceived by them, and the chisel will immediately verify the decision. Pits, defects, and colored spots should be examined carefully. No examination should be hurried. Such only result in disappointment to the patient and loss of patronage to the dentist.

*Case I.*—A white, opaque spot of softened texture, sometimes colored brownish, or even black. It may be round, oblong, serpiginous, or, if at the gingival margin, crescentic. No history of pain of any kind, except it be located upon the neck of the tooth, when there may be pain upon touching, either with an instrument or the finger nail, even before it is perceptible to the eye. *Possibly*, but very rarely, there has been pain upon eating sweets. The diagnosis is *superficial caries*.

*Case II.*—A cavity of variable size, depending upon the tooth, the location, and the age of the patient, but penetrating beyond the enamel. Quite apt to be sensitive to sweets and to cold air, and drinks. Cold causes sharp, fugitive pains, and occasionally transient aching. These symptoms are more marked in proportion as the tooth is of good organization. No pain upon suction or pressure upon the floor of the cavity. Points where the pulp is likely to be uncovered give no response to the probe, no pain upon tapping, and the sound is clear and ringing. The diagnosis is *simple caries*.

*Case III.*—The cavity is quite deep and filled with debris. If the decalcified dentine has remained in place so that this overlies the pulp, there may have been no pain; otherwise, the tooth is extremely sensitive to cold, a stream from the water syringe giving decided pain. There may have been slight tooth ache, or even a severe one, but of short duration. Pain upon suction and when food is wedged into the cavity is quite a marked symptom. The examining probe finds some spot sensitive to pressure, or possibly touches the exposed pulp; no tenderness upon tapping the tooth. The diagnosis is *complicated caries*.

*Case IV.*—Severe odontalgia, either by day or at night, nocturnal pain being almost pathognomonic. Pain throbbing, pulsating, or beating in character; it may be diffuse, extending over the entire half of the face, or, more rarely, located in the tooth; designated by the patient as "jumping toothache." There is some soreness of the tooth, and there

is likely to be considerable tenderness on tapping it with an instrument, although this symptom does not *always* exist. The probe readily detects the exposed pulp, now exquisitely sensitive. Hot water injections or hot drinks increase the pain, while cold water held in the mouth may give temporary relief. Reclining or taking any position that tends to cause a flow of blood to the head increases the paroxysm, hence the tooth is almost certain to ache at night. Bleeding of the pulp is sometimes a marked symptom, especially on removing a pledget of cotton from the cavity; it occurs only in aggravated cases. The countenance is anxious and the appearance of the patient dejected, especially so if the pain has been of long duration. The diagnosis is *pulpitis*.

The stages of this disease are very difficult to distinguish, and can only be supposed by the severity of the symptoms. Almost every severe and continued toothache, the pulp being alive, indicates that the stage of irritation is passed, and if the pain is violently throbbing, or if occurring at night, we know that congestion is reached.

*Case IV. (b)*—All the symptoms of acute pulpitis in an aggravated form, with a history of several days' standing. Very difficult to control by applications. If the cavity is well located, pus may be seen upon the surface of the pulp; pulp bleeds at slightest touch. The diagnosis is *suppuration of the pulp*.

*Case V.*—Severe, heavy, bounding pain, extending over one-half of the face, but felt plainly in the tooth and in the temples; sometimes very severe earache. Tooth excessively tender to the lightest touch and loose enough to be perceptibly moved with the fingers. It feels longer than the adjoining teeth, and over its roots the gums are congested and tender to pressure. If the cavity be opened, the pulp will be found to be dead, and the probe passes into the canal. The disease is *acute periostitis*, or as some prefer to call it, *pericementitis*.

The symptoms of aggravated pulpitis often simulate periostitis, but the tenderness of the tooth is not as marked, and there is not apt to be any soreness upon pressure of the gum above the root of the tooth. Ordinarily it is easy to determine whether the pulp is living or not.

*Case VI.*—Continued pain or remitting pain, tenderness upon pressure, and upon tapping the tooth the latter gives a dull sound instead of the clear, ringing tone of a healthy tooth. The pain, although severe, is not as unbearable as in periostitis, and there are apt to be intervals of rest. On examination, pus is apt to be found in the canal, which is also to be found open. The diagnosis is *acute abscess*.

*Case VII.*—No pain or tenderness. Tapping with an instrument produces slightly different sensation from health, but it is often necessary to tap an adjoining tooth to enable the patient to detect the difference. The sound produced by tapping is dull, like what would be produced if the



end of the tooth tapped rested upon blotting paper instead of a hard substance. Examination determines that the pulp is dead. The canal is filled with debris of bad odor; sometimes pus is plainly present. There may or may not be a fistulous opening through the gum and process at the end of the root. A history of gum boil can sometimes be obtained, or the scar may be present. The diagnosis is *chronic abscess*.

These cases are, of course, typical ones. The symptoms will not be so well marked in all, but practice and observation develop the discriminating power.—*Western Dental Journal*.

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## PEROXIDE OF HYDROGEN.

As peroxide of hydrogen is coming into such extensive use as a bleaching and remedial agent, the following, compiled from various sources, will be found of unusual interest.—[EDITOR DENTAL ADVERTISER.]

Mr. John G. Benedict, in a thesis submitted to the Massachusetts College of Pharmacy, gives a very comprehensive résumé of the literature of hydrogen peroxide, in which it is stated that the substance was introduced to common use in 1870 as a hair bleacher; its value as a bleaching agent for animal substances being particularly great. As a germicide it also rates high. As a medicinal agent it was first proposed by Dr. B. W. Richardson in 1858. In May of the same year, Dr. W. B. Clark, of Indianapolis, published in the *Medical Era* his experience with it in a number of diseases, and Dr. W. A. Blackman, of Brooklyn, N. Y., read a similar paper before the New York Society for Medico-Scientific Investigation in July, 1866. Both of these authors spoke of its influence in destroying pus, and its curative influence in purulent ophthalmia, suppurative otitis media, gonorrhoea and leucorrhoea. Pean, a French surgeon, used it as a spray in ovariectomy. Dr. Day, of Australia (*Lancet*, January 11, 1868), used an ethereal solution in a case of diabetes, which recovered. It is recommended in cases of septic dyspepsia and ulcerated teeth. It is rated as sixty times more powerful as a bactericide than carbolic acid; twenty times as powerful as salicylic acid, and forty per cent. more potent than corrosive sublimate.

Dr. J. Mount Bleyer draws attention to the efficacy of peroxide of hydrogen in a variety of diseases or conditions, where a powerful oxidizing action is indicated. Thus, it is in many instances a most prompt antifermentative and antiseptic, exceeding in power even corrosive sublimate by many degrees. As a disinfectant it is superior to chlorine or sulphur. As an application in form of spray, to diphtheritic membranes, and other morbid conditions of the throat, it is of the highest benefit.

It may be either used in its undiluted, commercial condition, or in dilution.

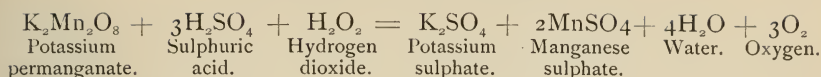
Although hydrogen dioxide (peroxide of hydrogen) may be prepared from the ordinary commercial barium dioxide (binoxide of barium) yet the yield is so unsatisfactory that it is under all circumstances advisable to employ a purified barium dioxide. This is prepared in the following manner :

Commercial barium dioxide is reduced to a very fine powder, and small portions of the latter are added, from time to time, to dilute hydrochloric acid (spec. grav. 1.050) until the latter is nearly neutralized. The solution having been cooled and filtered, it is treated with a small quantity of baryta water, whereby any ferric and manganic oxide, silica, or alumina are precipitated. As soon as a white precipitate of crystalline hydrated barium dioxide makes its appearance, the solution is filtered, and to the filtrate concentrated baryta water added; this causes a precipitation of crystalline, hydrated barium dioxide. It is well washed, and preserved, in its moist condition, in stoppered bottles.

To prepare hydrogen dioxide, small portions of the moist barium dioxide are gradually added to a cold mixture of one part of sulphuric acid and at least five parts of distilled water, taking care to prevent the temperature from rising beyond 20° C. (68° Fahr.), and suspending the addition when the liquid has only a slightly acid reaction. The precipitated sulphate of barium is allowed to deposit and the liquid filtered off. It is best to retain the slight excess of sulphuric acid since the compound keeps better. The solution thus obtained, which scarcely ever contains over five per cent. of hydrogen dioxide, may be concentrated either by exposing it in vacuo, over sulphuric acid, at a temperature of 15–20° C. (59–68° Fahr.), or it may be exposed to cold, and the frozen portion removed. The residuary liquid will be much more concentrated, as hydrogen dioxide does not freeze, even at –30° C. (–22° Fahr.). If the solution is allowed to evaporate over sulphuric acid, it may happen that bubbles of oxygen begin to be given off. In this case, the further addition of a few drops of sulphuric acid will arrest further decomposition.

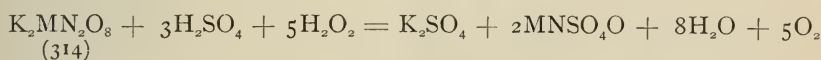
Hydrogen dioxide is easily soluble in ether. If the aqueous solution be shaken with ether, the latter dissolves out the dioxide. This ethereal solution is much more stable than the aqueous solution, and may even be distilled without decomposition.

The quantity of hydrogen dioxide present in any aqueous solution may be determined by strongly acidulating the liquid with sulphuric acid, and adding from a burette a solution of potassium permanganate of known strength until the purple tint of the latter is no longer destroyed. In this case the following reaction takes place :



Each gram of potassium permanganate used corresponds to 0.108 grm. of hydrogen dioxide.

The reaction here quoted is given on the authority of Roscoe and Schorlemmer. According to others (Wislicenus, Schoene, Trommsdorff), the proportions are these :



hence, one grm. of potassium permanganate would correspond to 0.541 grm. of hydrogen dioxide.

In commerce it is not sold in its pure condition, but in a dilute form. It is customary to designate the various grades of strengths by the volumes of gas which the particular solution is capable of yielding. Usually the commercial article is between "ten" and "twenty" volumes. By this it is understood that hydrogen dioxide, in its pure state, is a *liquid*, and not a gas; and the "ten volumes" is meant to say that the product contains ten volumes of available oxygen; or, in other words, one measure of the commercial liquid can give off ten measures of oxygen. This corresponds to a strength of only three per cent. of hydrogen dioxide. A "two volume" solution would be one which gives off twice its volume of oxygen, or which contains 0.6 per cent. of hydrogen dioxide.

The qualification, ten "volumes," originated some years ago, when the substance was first put upon the market, and this qualification has been adopted in the price-lists of all countries.

It must be preserved in a cold, dark place, in glass-stoppered bottles, which should be small, if the consumption of the article is insignificant.

A new process for preparing peroxide of hydrogen has recently been patented in Germany by Siegfried Lustig, of Breslau. It is briefly as follows :

Zinc amalgam is shaken with alcoholic solution of sulphuric acid and air. The mercury and the sulphate of zinc which is formed, and is precipitated in the alcoholic liquid, is removed by filtration, and the liquid concentrated in vacuo. It then represents an alcoholic solution of peroxide of hydrogen.

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THE WHOLE of the matter for the February number of the *Dental Record*, London, was in type, but an unfortunate fire at the printer's destroyed it entirely, including the MS. of a very interesting chapter of "Another Professional Holiday." Dr. Cunningham has kindly undertaken to re-write that section in time for the March issue.

## IMMEDIATE ROOT-FILLING.

The editor of the *Independent Practitioner* is swinging into line upon this question. He says, (p. 39, Jan. number), "There is no difference of opinion concerning the propriety of filling aseptic canals immediately, and these probably comprise more than half the cases in practice. Nor is there any very serious questioning concerning the practice of the immediate filling of canals when fistula exists." However, the editor again raises false distinctions when he further says, "The advocates of immediate root-filling urge it as applicable in all cases." This we believe to be incorrect. As far as this journal's advocacy of immediate root-filling is concerned, it certainly is incorrect, nor can we remember that any prominent operator has indicated this procedure "in all cases." Now, in order that our position, at least, may not be further subject to incorrect reporting, we desire to express it once more, viz.: *Immediate root-filling must not be practiced unless dryness, which is the first step toward an aseptic condition, can be secured.* This rule, in substance, is found on pages 182 and 522 of the *Western Dental Journal*, and we hold it to be good in blind abscesses, as well as in abscesses with a fistulous opening. We do not wish to stand accused of dealing with totally different pathological conditions in a similar manner. We certainly do not so proceed, but if in the end we gain a dry and aseptic canal, we fill it at once, and the different pathological conditions will very soon disappear, and a perfect cure will be the result.

This treatment is in sequence of the proved knowledge that the disease is the result of a septic pulp canal. When that septic tract has been obliterated and its place taken by an impermeable and indestructible filling, a certain cure must result, just as certainly as if the canal had been obliterated by extraction of the tooth. It is not necessary that any drainage shall remain after the capable operation, as the remaining inflammatory products will speedily be absorbed and changed into healthy or scar tissue.

There is *no* "curious lack of comprehension of the principles involved" by those who advocate immediate root-filling, as is intimated by the *Independent Practitioner*. So far as our own personal experience goes—and it is duplicated by the experience of other advocates of immediate root-filling—we are not without a reasonable comprehension of the pathology involved, and for many years we thought it little short of malpractice to treat septic canals and abscesses as we are now daily doing, and the continued treatment was only dropped when accidental circumstances forced immediate filling in a few cases, with results beyond our belief and comprehension. We afterward tried carefully and experimentally



the same treatment in cases exhibiting all stages of pathological conditions in abscessed teeth, with such continued success that it is now the accepted treatment in our practice.

The objectors to immediate root-filling are now clinging—as we once did—to the strained reasoning that forbids immediate filling, and we are quite aware that argument with them is useless. We do, however, know that if they will but try it in the cases which to them radically call for prolonged treatment, they will then be compelled to admit the truth of our statements, and their lives will cease to be harrassed with the never-ending “treatments” which consume so much unnecessary attention, give rise to so much worry, and often become failures on account of neglected appointments.—*Western Dental Journal*.

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### COPPER AMALGAM.

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The operator of to-day, who is not familiar with all the methods and materials known to dentistry, is certainly laboring at a disadvantage. The present tendency of American Dentistry is toward conservatism. We are learning to use more discrimination in the selection of filling materials, choosing those most suitable and serviceable for the case in hand, regardless of any previous prejudices which may have existed.

Copper amalgam is wholly different from other amalgams, in the fact that it contains nothing but pure copper, combined with mercury. This amalgam has been used in England for a great many years, but in this country it is almost unknown in its clinical aspect, and has not received the attention it merits.

It would seem at a glance that its use here had been confined more to experimental purposes, its general adoption as a filling material having been considerably neglected, and this, we think, quite unwisely. We have used copper amalgam quite extensively for several years (six or seven), and therefore can speak advisedly concerning the results obtained. These are sufficiently flattering to induce its continuance in the future, giving it the preference over other preparations bearing the stamp amalgam.

Our experience in the use of this material has been confined largely to the English preparation known as “Sullivan’s Cement.” The shrinking propensity, so common to the majority of amalgams now on the market, is almost unknown to the one under consideration. This alone is a most commendable feature. As a preserver of the teeth which fall under the head of faulty structure, this material has no equal. To further substantiate the above assertion, we take the liberty of quoting Dr. W. D. Miller,

who says: "The only filling at present in use which exerts a continual anti-ferment action upon the walls of the tooth, and its immediate surroundings, is the old copper amalgam. Not only that, but the very substance of the tooth containing such a filling, itself becomes antiseptic. \* \* \* Secondary decay in such a case would be next to impossible, where anything like cleanliness was observed. This result is well supported by observations which I have had abundant opportunity to make for the last five years, here where this material is so extensively used, and I do not hesitate to say that if our only object is to check the destruction of tissue by caries, there is no material at present in use with which this object may be so surely accomplished as with a good copper amalgam." Space forbids our commenting at this time upon the various theories regarding the manner in which this material preserves tooth structure; suffice it to say that chemists who may be considered as authorities, assert that this preservative property is the sulphide of copper, formed by the action of the saliva upon the metal, which has the power of preserving by its antiseptic virtues. Other observers claim that the copper salts which are formed, act purely in a mechanical manner, by plugging or sealing hermetically the dentinal tubuli, thus preventing the possibility of destructive agents penetrating, and acting upon the tooth in a locality protected by such a filling. The latter theory we regard as being quite plausible, and we do not wish to lose sight of the fact that the former is not valueless.

Objections have been raised against the use of copper amalgam, because it discolours the tooth. This is not universally true, as cases are seen where this material has been in use for five years, the teeth to all external appearances appearing as clear and perfect as the day they were filled. Again, other teeth have become discoloured, but not to a degree to make them unsightly.

In those cases where discoloration had taken place, it was remembered that the amalgam, when mixed, was "dirty," *i. e.*, there was a decided soiling of the hand or mortar in mixing; whereas, in the other cases, the amalgam left the hand unsoiled. We are not prepared to state positively that the salts of copper are self-limiting in their penetration of dentine, but if this should be the case, we would not expect to find any discoloration of the tooth.

We have lately been using some copper amalgam manufactured in Chicago, which for plasticity and general working qualities, is preferable to the English preparation; and the objectionable feature of uncleanness seems to be entirely overcome by a new process in its manufacture. We therefore can safely predict that if the manufacturer uses care in its preparation, selecting his materials with a view of having them chemically pure, a copper amalgam can be obtained which will yield uniformly good

results. And we need not fear that the tooth structure will be marred by discoloration, provided proper precautions are observed in its introduction.

The mechanical texture of copper amalgam is exceedingly compact, and the property it possesses of receiving the most delicate markings, makes it possible to adapt it to the inequalities of the cavity with but slight pressure. It would be imprudent to place it in a cavity exposed to view, because the surface of the filling turns black, and therefore would be unsightly. Where amalgam is to be used for filling temporary teeth, nothing better can be found than copper amalgam.

It is safe to predict that amalgams will not yet be dispensed with ; this being true, when we are compelled to use an amalgam, let it be the very best.—*The Dental Review*.

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## THE CLAIMS OF GUTTA-PERCHA.

From the New York Odontological Society proceedings, in *Independent Practitioner*.

Dr. J. Foster Flagg, of Philadelphia, gave to the meeting a lengthy and very interesting talk on "The Claims of Gutta-Percha as a Tooth-filling Material, with Methods of Manufacture, Testing, Heating and Manipulation." Before entering upon his subject he took occasion to make an exceedingly complimentary reference to the New York Odontological Society.

Prof. Flagg then exhibited several pieces of crude gutta-percha as obtained from the manufacturers, and called the attention of the members to the great difference of seemingly like pieces. He offered for examination two of these pieces of equal thickness, one being considerably wider than the other, and requested the gentlemen inspecting them to compare the strips and give opinions regarding their flexibility, etc. Replies were given, that the narrowest piece appeared to be much stronger or tougher than the wider one. The reason for this difference, as explained by the doctor, is that even where several lots of gutta-percha were made from the same batch of gum and by the same process, the same results would not always follow. He was informed by the foreman of the works where he procured his crude gutta-percha, that when a quantity of gum was made up and rolled out there would appear several grades of the material. Some would be excellent, some not so good, and some exceedingly poor ; consequently, great care should be exercised in selecting and preparing the gutta-percha for a tooth stopping. When fortunate enough to obtain a good quality of gutta-percha in any quantity, it should be kept in salt water, as the crude gum will deteriorate unless made into stoppings ; but if thus made up it will remain without change for an indefinite period.

Samples of many preparations of gutta-percha were shown in the form of stoppings packed in glass vials, with carmine ink added, and all were found to leak. Dr. Flagg said that the pink base-plate gutta-percha, though exceedingly tough, leaked more than any of the other preparations. He thought it was not possible to make a filling of any form of gutta-percha that was proof against leakage. A friend had suggested varnishing the inside of the tube or vial with gutta-percha dissolved in chloroform, before introducing the filling. This he tried, and on being subjected to the same test it was found to leak in a few minutes. Stoppings were also carefully packed in little ivory cups, and after being tested with the ink were sawed in two, when the same results were observed. The products from the best manufacturers, although not absolutely proof against leakage, he thinks safe enough to protect the cavities from further decay.

A cavity in a large wooden tooth was filled by Dr. Flagg and passed around the room for inspection. It certainly presented a strong, hard filling. He prefers and uses serrated points for packing the gutta-percha, much like the large instruments used some years ago for condensing gold fillings. He objects to the practice so common with many operators of passing the stopping into or over the direct flame of the lamp, for it does not get uniformly heated in this way, the outside being over-heated while the centre is sometimes hardly warm. He instanced as an example a slice of bread held over a hot fire, which might be much scorched on the surface while the centre was not even crisp. No good or uniform filling can be made by this mode of heating. Just as much care is required in filling with gutta-percha as with gold. The rubber-dam should be adjusted to exclude any possibility of moisture, and the cavity carefully prepared or treated. Small bits of the stopping, after being properly heated, should be packed piece by piece with as much care as though using gold.

Replying to an inquiry as to his method of finishing gutta-percha fillings, Dr. Flagg stated that he used heated instruments for this purpose. He objected to the practice of wiping the stoppings with cotton saturated with chloroform, as it tended to soften the surface. He stated that many gutta-percha stoppings failed after being in the mouth for a time, from what he demonstrated "heat or mouth rot." In these cases the fillings seem to disintegrate.

Many dentists regard gutta-percha stoppings as mere temporary fillings, yet consider gold as permanent. He asked what proportion of cases were to be seen where gold fillings, after having been in the mouth three, five, or eight years, were not in such a condition that the point or edge of a burnisher could not be introduced around the margin. And when such fillings are removed, much tooth structure must be sacrificed before other fillings can be put in; gutta-percha fillings, though they may wear away somewhat, or "cup out," preserve the integrity of the tooth structure and



can easily be replaced. These, then, should more justly be considered "permanent." Dr. Flagg being interrogated regarding copper amalgams, stated that where teeth were badly broken away or riddled with cavities and could be filled with nothing else, he thought copper amalgam would do good service.

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## PROFESSIONAL ETHICS.

There are several curious things in this world, and "professional ethics" is one of them.

A physician will not advertise because, as he will tell you, it is against professional ethics. The word "ethics" in this use means simply professional fashion—and a mightily grinding fashion it is, too, for a young doctor who goes into a new town in the hope of building up a practice. The energy which he could turn to account, had he opened an ice-cream "saloon," or a barber-shop, or a dentist's office, in advertising himself and letting the community know that he was on hand ready for business, is in the doctor's case made of no avail. He vaporizes and fumes, and likely as not gets in debt, but he must stick it out, or quit; it never would do to violate professional ethics.

There are, however, other and happier practices which may also be called professional ethics.

Dr. K., of Gitthar street, is an agreeable man of large practice and many friends. Among these is Lawyer J., who never lets any ideas of professional ethics stand between him and a fee.

As the doctor was driving down the street the other morning, he saw Lawyer J. tramping along through the snow. Reining up at the curbstone he invited the pedestrian to "ride a piece." Before the "piece" had been covered the lawyer asked how business was. Plenty of business, was the reply; but collections are slow. "By the way" said the doctor, "if I should sue So-and-So for his bill, what would it cost me in the court?" The lawyer promptly explained the matter, and added: "I wouldn't bring suit just now; he's a square man, but he has been sick and out of work. Before you sue him give me a chance to buy the debt."

"All right, much obliged," says the doctor, and each went his way. In due time in came a bill from Lawyer J. for "professional advice," and it was a good deal of a bill, too.

The doctor thought it over, but didn't pay. Weeks later the lawyer's collection-clerk called at the doctor's office and presented it again.

"Tell Mr. J.," says the doctor, "that he can collect this bill by suing; but before he brings suit ask him if he won't give me a chance to buy the debt."

When this was told the lawyer he saw the point, and promptly telephoned up to the office of Dr. K.

"Hello, Doctor! That you? Well, say, that thing's all right. One on me. By the way—hello—don't cut us off yet, Central—hello—hell—oh yes—what is it? yes,—I was going to say, take your wife and come over this evening." The doctor said he would if he could.

When evening came, the doctor and his wife were at Lawyer K.'s, where they met a dozen other friends. The lawyer's wife, a sweet-voiced woman, undertook to sing for the company, but found herself hoarse.

"Here, Mrs. J.," said the doctor, placidly, as he pulled a box of troches from his pocket, "try one of these. They're pleasant to the taste, and I think will soon give you clearness of voice."

The evening passed and a month went by. In his mail last Tuesday morning Lawyer J. found a bill from Dr. K.: "To professional services and prescription for Mrs. J.," and a very aristocratic charge was set down. The lawyer took the bill home to his wife, and was reminded of the facts in the case. At last accounts he was pondering on revenge; but the advent of Lent has practically cause a truce of hostilities—for this narration, gentle reader, is just as true as—is necessary. The battle of J. and K. is not yet fought out, and the sequel is likely to be as interesting as these two sharp-witted advocates of "professional ethics" can make it.—*Buffalo Express*.

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## ANCIENT REMEDIES.

"MEDICAL CLASSICS" is publishing some very interesting and amusing ancient medical literature. In a recent number we find extracts from "The Pharmacopœia Extemporanea: Or a body of medicines containing *a thousand select* prescripts answering most intentions of cure. For the assistance of young physicians. By Thomas Fuller, M. D., Cantab. The Fourth Edition, London: Printed for W. Innys, at the West End of London, St. Paul's Churchyard, 1730." The two paragraphs below are fair samples of the choice doses our forefathers had to take:

### ANTHELMINTHIC POWDER.

Take Coralline prepared 1 Dram; Mineral Æthiops (made without Fire) half a Dram; Oil of Wormwood 1 Drop; make it into Powder.

I thought the Preparation of *Æthiops Mineralis* without Fire had been an Invention of this Age; but I find it in *Rondeletius* (*de Unguentis* 1037.) where he saith, *Argentum vivum extingui potest, vel Sulphure, vel Aceto, vel Calcinatione.*

*Rochas* saith, Wormseed is so far from destroying, that it generates Worms; and attempteth to prove it thus. *Take one part of Seed powdered, and 3 of fine Flour; make it into a Loaf; keep it in a warm Place, and 'twill produce Plenty of Worms in 24 Hours.*

But *N. Andry* ( who writes a Tract of Worms ) assureth us, he made the Experiment several Times without Success: And it's certain, that any Plants laid up in Heaps, and putrified, will generate Insects, tho' not such as human Worms.

*Tabernomontanus* gives an Account of the Frauds and Impostures of Vagabond Mountebanks, who attributing most Distempers to Worms (when the Sick hath none at all) that they may seem to make their Words good, give *powdered Worms*, and those generate other Worms in the Intestines, which they carry off afterwards by Medicines that expel Worms. But I must intreat Leave to dissent from this Author, because the Worms must be dried well at the Fire before they can be powdered; and I can as much expect to hatch Chickens out of roasted Eggs, as Worms out of torrified Worms.

Let the Use of all this be, that the Reader believe not everything lightly that he findeth in Books.

Let 15 grains be given to an Infant Morn and Even, for 3 Days before New and Full Moon, to disturb the Worms, and drive them out of their Nests, and kill them: And then after it, the next following to cast both them and their Seed quite out of the Body.

Mineral, such as Mercurial and Antimonial Powders, are not conveniently given in thin Liquors, partly because being heavy they will sink and be left behind at the bottom: And partly because they are apt to stick in the Gullet, or *Plicæ* of the Ventricle, whence much Mischief may ensue, as continual Provocation to Vomit, or Purge, Salivation, &c. But given in a solid Form they will be clean swallowed; and after ( the *Menstruum* and Ferment of the Stomach operating ) rightly subacted, and disposed of, so as to occasion no manner of harm.

#### FOR BALD PATES.—CRINIFIC UNGUENT.

Take Bees burnt, Mouse-dung, each half an Ounce; Balsam of Peru 2 Drams; Honey as much as sufficient; make an Unguent.

The Fore-part of the Head only is liable to be bald, saith *Aristotle*: The Reason given is, because, between the *Cutis* and *Cranium*, in the *Sinciput*, there are found no Muscles or Fat, as there are in the *Occiput*; and so the *Cutis* there becoming dry, and, as it were, testaceous, the Hair falls off.

## BENEVOLENT DENTISTRY.

The correspondent of the *Tablet* in Rome, describes the house near the bridge of Quattro Capi, of Fra Orsenico, a monk "who, year after year, standing on the same spot, has grown gray in performing one kind of dreadful service for the poor." There, on the far side of the Tiber, in a little room by the bridge of the Quattro Capi, is a Frate, to be seen at any time, who has been there these twenty years, doing the same thing day after day for the love of God and his neighbor. Close by the west end of the old bridge is a large glass door opening into a little room, and above the door is a piece of faded tapestry, upon which, in yellow letters, are worked the words "Fra Orsenico, Dentista." Fra Orsenico is a tall, powerfully built, gentle-looking man of about fifty, and ever since he was thirty he has outwardly at least limited his life to the fulfillment of one corporal work of mercy. From sunrise to sunset he is there at his post ready to pull out the teeth of all who suffer and come to him, and without charge of any kind, except a request for three Hail Marys. The walls of the room are covered with pious pictures; but it requires an effort to look at them, for the eye is instantly arrested by other objects. Along one side of the room and beneath the table upon which the Frate keeps his instruments, are two solid oak chests, without lids, and filled with teeth. Thousands and thousands of teeth of all sizes lie piled up there in those boxes—the results of the Frate's industry. Above the table is a narrow shelf of wood which runs round the room, and upon which are systematically arranged all sorts of monstrous fangs, stubborn stumps, that it required a very triumph of skill and strength to extract. Fra Orsenico, who is dressed in the black habit of a Brother of St. John of God, told me in a quiet simple way that he generally pulled out daily about a hundred teeth, and that he had drawn as many as four hundred teeth in a single day. And he has been doing that for twenty years. Then, glancing uneasily at the little mountain of bones with their streaks of dull red beneath the table, I asked the Brother how many teeth he supposed he had extracted from first to last. He smiled slowly and then said vaguely, "Perhaps millions." I should perhaps have gathered some further particulars about this strange and most devoted man, but before I could ask any further questions the door opened, and a feeble, poorly dressed old woman hobbled in, and, without speaking, sat down. One could have hoped that her withered wintry old age would have spared her that sort of trouble; and somehow I have not quite realized what she had come for, when Fra Orsenico asked me if I would like to see the operation—it would be over in a moment. It was meant in all kindness; and I am afraid my leave-taking may have seemed a little abrupt. As I hurried across the bridge I saw a sight which seemed



like a shadow across the sunshine. A child was being led or rather dragged along, by two people who, from their obvious sense of possession, I knew were her parents. When they had passed I looked back ; and they too were going to Fra Orsenico. It is probably not necessary to add that the Frate's methods are very simple. A tooth that is drawn can never ache again, and anæsthetics are costly and require a great deal more time than the Frate has got to give.

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## MEDICAL CONGRESS, WASHINGTON, 1887. DENTAL SECTION.

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BY JOSEPH WALKER, M.D.

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I have great pleasure in testifying to the success of the dental section of the Medical Congress.

The attendance of members of this section was far above the average attendance of other sections. Although many of the well-known practitioners were absent, yet sufficient interest was excited by members present to render the meeting instructive and profitable. Papers were read and illustrated of deep scientific research ; new operations explained and performed, the success of which must be tested by time, the theory on which they rest being in some instances scarcely in accordance with, if not directly opposed to, the old teachings of surgery, physiology, and pathology.

The success of the dental section was not so complete as many of my American friends desired. Various reasons may be assigned in explanation. The first I will mention is, "The Constitution of the United States." For example, whilst all the States acknowledge obedience to the Central authority, yet each State seems to possess its own peculiar and distinctive code of laws, such laws being entirely inoperative beyond the area of the particular State in which they were framed.

This independent action of each State shuts out the possibility of one standard of preliminary education being adopted throughout the whole length and breadth of the States, prior to professional education. No examination in arts can be accepted by all the States, except by arrangement with each State Legislature.

The State Legislature grants facilities for combination unknown in this country. Professional men can, by *petition*, obtain legal powers to establish a college, legal, medical or dental — a college with legal powers to educate, to examine, and grant degrees ; the staff of such college holding in their own hands the power to regulate the period of study, the

curriculum, the standard of examination, the character of degree granted. Hence the large number of dental colleges in America, which are fast increasing. In one city I visited I found five dental colleges already in existence.

I fear this competition must in the smaller schools affect the high standard attained by a few of the best institutions. A second reason may be found in the character of the dental curriculum, a curriculum of two years' duration; only a nominal guarantee of early classical education on admission to professional studies; the lack of general registration of the student on entrance to a dental college; the want of affiliation of the dental college to a medical hospital and school. The dental student in the American curriculum obtains no general medical or surgical clinical teaching, nor is there any well considered organized plan of medical clinical instruction; no tutorial instruction at the bed-side of the patient; in fact, the dental student is never associated or educated with the general medical and surgical student at a general medical and surgical hospital. The examinations are conducted by the teachers of the dental colleges. The degree of D. D. S. is also conferred by the same staff of teachers. There is no interchange of teachers of the various colleges to form an independent examining board. These facts are known to the medical world of America, and must influence the position of the dental section at a medical congress.

A dental college and hospital is generally located in one large building of two flats. The upper flat is devoted to operative dental surgery; the lower flat is divided into sub-divisions, chemical laboratory, mechanical laboratory, dissecting room, lecture theatre, class rooms; this arrangement minimises the labor of supervision. The dental hospitals are open from nine to five or six o'clock. Patients are admitted of every class without reservation. No questions are permitted by the authorities as to the circumstances of the applicant. A fee is charged for gold stopping equal to the value of the gold leaf. For the regulation of irregular teeth or adjustment of malformation of the maxilla, a fee is fixed for treatment and necessary mechanical appliance by the surgeon of the day. Artificial dentures of every description are prepared and adjusted for any applicant. The surgeon of the day or his representative advises the necessary treatment. A fee, honorable in character, is proposed, and if within the means of the patient, is accepted. The student most capable to carry through the preparation of the denture and final adjustment, is nominated to take charge of the case under the supervision and direction of the senior staff demonstrator of mechanical dentistry. The fee is paid to and received by the secretary.

In the mechanical laboratory, benches are arranged with drawers, pins and lockers, equal to the number of students in daily attendance; in the

larger schools a locker, drawers and pin is allotted to every two students. The work is so arranged that half the day is allotted to each student. The modelling in plaster, sand and metal, the furnaces for smelting and melting metals, purifying gold, the furnaces for continuous gum work, are arranged in a distinct arbitrary division of the laboratory. The making gold dentures, mounting teeth and fine adjustments are done in the opposite end of the laboratory, so that a clear and general supervision can be obtained by one dental officer.

In one of the best organized colleges, a senior dental surgeon is in attendance at the hospital from 9 A. M. to 5 P. M. Great self-denial is shown by this teacher, who possesses a full appreciation of what is required to make a dental hospital and college efficient. He has resigned his own active practice into the hands of a *locum tenens* for six consecutive months. This senior dental officer gives a general supervision over the whole working staff, watching and serving the interest of patients, demonstrators and pupils.

In other dental schools a senior dental surgeon devotes either the morning or the afternoon to general instruction or supervision. The medical and surgical staff give their lectures in the same building, the prospectus being so arranged that the lectures fit in with the operative and mechanical hospital practice. The one great advantage to the dental student of America is, that all his studies are carried through in one building. The absolute freedom from any check in the admission of patients and subsequent dental relief in operation and mechanical treatment, must be open to much abuse, and interfere with the private practice of the junior dental surgeons.

In conclusion, I will ask my medical and dental friends in America, to accept my best thanks for their kindness and hospitality, for their unreserved confidence, for the interchange of thought, and practical illustrations of their dental [operations in their private surgeries. In return, I hope they will allow me to offer, and afford me an opportunity of giving them similar good-fellowship when they visit Great Britain.—*Journal of British Dental Association.*

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IT HAS JUST leaked out that the dinner which Dr. Evans, the famous American dentist, gave to Mr. Blaine and Minister McLane at his Parisian home recently was the cause of an unpleasant episode. Mr. Blaine was placed at the right hand of the host, while Mr. McLane was on the left. The Minister felt that his position as the representative of the United States Government entitled him to the seat of honor. He left the house as soon as the dinner was ended. The following day Dr. Evans received a note from Mr. McLane, in which the writer said that he did not attend the dinner "to be insulted."—*N. Y. World.*

## METALLIC MODELS FOR RUBBER AND CELLULOID WORK.

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BY T. M. ALLEN, D. D. S., BIRMINGHAM, ALA.

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I hear a great deal of complaint from dentists about the shrinkage of rubber in vulcanizing, and also about the palatine surface of plates being rough and irritating the gums. I have had some trouble from the same cause, and to overcome this I have adopted metallic models and I find that I succeed better, and the plate comes out of the vulcanizer with a hard, smooth polished palatine surface; and where gum teeth are used there is no shrinkage in cooling and no broken blocks. My method of making metallic models is as follows: (I use plaster exclusively for impressions.) After taking the impression in plaster I put over it a very thin sheet of base plate wax, pressing it down in the alveolar ridge depressions with wax knife or finger, or warm the wax and replace the impression in the mouth, pressing it up good, then remove from mouth (be sure to get your impression high up on the alveolar borders); trim the wax around the edges of the impression a little higher than you will want your rubber plate to come up on the alveolar ridge, then oil exposed parts of plaster impression and fill over wax and all, as though you were to make a plaster model. When hard, separate impression and model, being careful not to break or mar impression, remove wax and cut two or three shallow grooves in the model, from heel of plate to near the edge of alveolar border, cutting vents for pouring metal and for escape of steam at heel of plate; then replace model and fasten it to impression with wire or clamp, and dry impression and model by dry heat, and while hot, melt metal for making model and pour into gate at heel of impression. When cold, separate from impression and you will have a thin metallic coating over your plaster model; you then proceed as with an all-plaster model. The metallic coating over the plaster model gives it strength to resist pressure in closing flask, and also overcomes the warping or shrinking tendencies of the rubber. After vulcanizing, remove plaster from metallic coating, and with a pair of plyers or other suitable instrument bend down the alveolar edge of metal and you can separate the metal from the plate without any trouble, and will have a hard, smooth-polished palatine surface that will not irritate the mucous membranes, and is much easier to keep clean. There is no danger of breaking down your model in closing the flasks, no matter how deep your undercuts may be; and as there is no giving way of the metal coating your plate cannot warp, shrink, or crawl from over the condyles as when plaster models are used. The advantage in making the metallic model this way is, that you only have a thin



coating of metal, and you can easily get it out of the plate ; whereas, if you had made it all metal you could not separate it without injury to the plate. The metal used can be Babbitt metal, block tin, or tinner's solder. I prefer the two latter as they do not tarnish by the action of the rubber and plaster in vulcanizing. Never use lead, as it oxidizes and blackens the rubber.

I use a metal that I prepare especially for the purpose, that melts at a low temperature, flows easily and smoothly, and makes a sharp impression. This metal can be used over and over indefinitely. It does not oxidize the surfaces of plates in contact with it, and it comes out with a polished surface.

After vulcanizing, the flasks should be taken out of the vulcanizer as soon as possible, cooled off and opened, or set away to cool. If left in the vulcanizer the plaster becomes soft and mushy in cooling, and allows the plate to warp or shrink ; but when taken out of the vulcanizer and left to cool off, the plaster remains hard and resists any tendency in this direction.—*Archives of Dentistry*.

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## A NEW DEPARTURE IN BRAZING AND WELDING.

The cheapening of oxygen by Brin's process of manufacture has put into the hands of metal workers a new power. I have recently made a few experiments with the compressed oxygen and coal gas, and found that with a  $\frac{1}{2}$ -inch gas supply a joint could be brazed in a 2-inch wrought iron pipe in about one minute, the heat being very short, the redness not extending over one inch on each side of the joint.

The appearance of the surface after brazing led me to experiment further with welding, a process which is not possible with ordinary coal gas and air, owing to the formation of magnetic oxide on the surfaces. Contrary to my expectation, a good weld was obtained on an iron wire  $\frac{1}{8}$ -inch in diameter with a very small blow-pipe, having an air-jet about  $\frac{1}{32}$ -inch diameter. This matter requires to be taken up and tried on a large scale, for such work as welding boiler plates, which, it appears to me, can be done perfectly with far less trouble than would be required to braze an ordinary joint. The great advantage of this would be that the boilers would require no handling, but could be welded with an ordinary large blow-pipe in position, and with about one-tenth the labor at present necessary.

The cost of the oxygen is trifling, and it is evident, from the results obtained in brazing, that the consumption of gas would be considerably less than one-fourth that necessary with an air blast, irrespective of the fact that welding is possible with an oxygen blast, whereas it is not possible if air is used.

The surface of iron, heated to welding heat, by this means comes out singularly clean, and free from scale, and a small bottle of compressed oxygen, with a blow-pipe, and a moderate gas supply, would make the repairs of machinery, boilers, brewing coppers, and other unwieldy apparatus, a very simple matter. The trouble and difficulty of making good boiler crowns, which so frequently "come down," would be very small indeed, when the workman has an unlimited source of heat at command, under perfect and instant control.—*Thos. Fletcher, in Nature.*

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### COMBINED GOLD AND TIN FILLINGS.

*To the Editor of the Dental Record:*

SIR—On page 529 of your issue for December, I note another attempt to give Dr. Abbott, of Berlin, the credit of having first used a combination of gold and tin foil. Dr. Abbott might possibly have seen these fillings done in England, and have been the first American Dentist brave enough to defy the opinions of the American Dental Societies of his time by using such a mixture. Twenty-six years ago, when I commenced practice, I adopted the method of using gold and tin foil rolled together, not from any original experiments or views of my own, but simply from the fact that I constantly saw very old and perfect fillings done by the same method. Some of these fillings must have been something like twenty years old when I saw them twenty-six or more years ago, and I have no doubt that Mr. James Lomax, of Manchester, had inserted thousands of mixed gold and tin fillings before the date Dr. Abbott was supposed to have originated the practice.

The thorough work done by Mr. Lomax, and his system for using the combined metals, were very well known to all the best operators of his time in the district, any of whom will be able to bear me out in the statement, that the system supposed to have been originated by Mr. Abbott twenty-five years ago, was old, well-known, and largely practiced at the time.

Warrington.

THOS. FLETCHER.

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*To the Editor of the Dental Record:*

SIR—On page 44 of your issue for January, 1888, your correspondent objects to "another attempt to give to Dr. Abbott, of Berlin, the credit of having first made use of a combination of gold and tin foil." If your correspondent will kindly refer to the *Independent Practitioner* for 1884, page 403, or to the *Correspondenzblatt für Zahnärzte*, 1884, page 274, or

to Poulson's *Vierteljahrlicher Bericht*, No. 6, he will find the following account: "About—years ago a gentleman called upon Dr. Abbott, of Berlin, to have his teeth examined. In one of his teeth Dr. Abbott found a discolored filling having the appearance of amalgam, and remarked that it was the best amalgam filling he had ever seen, to which it was replied that the filling was not of amalgam, but of a mixture of tin and gold foils. Since that time Dr. Abbott used this material," &c., &c.

I omitted this story in the present instance, partly because I had repeated it on so many occasions that it seemed superfluous, and partly because I knew nothing whatever as to the previous history of the filling referred to above. Dr. Abbott never claimed for a moment to have originated the practice. As far as the mere question of priority in the use of the combination is concerned, if we would do full justice, we must go many years beyond Mr. Lomax, to Dr. Spooner, who, we are told (*Cosmos*, 1888, page 37,) made use of the combination 50 or 60 years ago. I was much surprised to find that the combination had been extensively used in certain districts of England by Mr. Lomax, Mr. Martin, and others. It is to be regretted that the methods employed by these gentlemen, and the results obtained by them, were not made known to the profession at large. The credit of having done this must remain, I think, with Dr. Abbott, or with those who learned directly from him. One part of the correspondence I particularly value, *i. e.*, the statement by your correspondent that he constantly saw *very old and perfect* fillings made of the combination of tin and gold.

Yours, &c.,

Berlin.

W. D. MILLER.

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## WESTERN DENTAL JOURNAL AND ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

"I suppose every one knows of the Odontological Society of Great Britain. I proposed to them to get up some clinics. Their reply was that they were a scientific body, and wanted nothing to do with practice. I arranged two clinics at my own house, and invited the Society to see, at the same time, Dr. Rosenthal's apparatus for the treatment of alveolar abscess. There are one hundred members of the Society. Five came." —*Dr. Elliot*.—"This is about what we would expect from the Odontological Society of Great Britain, 'patterners after' the German method, which consists in wandering, note-book in hand, through the hospital wards, jotting down the length of the groans and the dimensions of the ulcers, while the patients die under their very eyes; but, you know.

they are *scientific men*, who cannot bemean themselves with practice, unless, perchance, a crown prince should be afflicted, and then their opinions are as varied as the stars of heaven."

The above paragraph occurs on page 553 of the December issue of the *Western Dental Journal*. It is a pity that our contemporary does not write about matters within his cognizance, and avoid sweeping criticisms of a society which has done more good scientific work than usually falls to the lot of specialist gatherings. It is so pitiful to find persons who should really know better than sneering at "scientific men," as if a scientist were anyone other than an individual, who, besides using his hands, has discovered he possesses a brain, and has further learned to use it. The sneerer at "scientific men" is usually so antithetical as to be ignorant of the importance of research. We are sure that our contemporary knows better than this, and are therefore the more surprised that it has allowed itself to be led away into a piece of extravagant criticism based upon a circumstance, the particulars of which our contemporary is clearly ignorant. —*British Journal of Dental Science*.

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## DENTAL COLLEGES.

### MEHARRY MEDICAL AND DENTAL COLLEGE.

The twelfth annual commencement exercises of Meharry Medical College, and the second of the dental school of the Central Tennessee College, were held at Nashville, February 20th, under the most favorable circumstances. The degree of Doctor of Dental Surgery was conferred by J. Braden, D. D., upon Henry Lewis Smith, Bastrop, Tex., and Claude Melnotte Wade, Hot Springs, Ark.

The Meharry Medical Department of the Central Tennessee College was founded in 1876. It was designed for the education of colored physicians. It takes its name from the family who have so liberally aided it from the beginning, and to whom, above all others, it is indebted for the success which has attended its course.

The course of study requires three years. It comprises the branches usually taught in medical colleges. During the past twelve years ninety young men, including the present graduating class, have completed the required course and have received diplomas.

The past session has been the most encouraging that this college has enjoyed. Sixty-two students have been enrolled, and the present graduating class is nearly twice as large as any that has preceded it.

The school of dentistry has just closed its second session. There is a fine opening for colored dentists there, and this school is ambitious of



furnishing facilities equal to any white dental college in the South. It has received the indorsement of the Southern Dental Association, and belongs to the American Association of Dental Faculties. Plans for a new building have been prepared, and it will be erected as soon as the necessary funds can be secured.

The *Nashville Daily American*, in an article on "The Negro," comments on the present relations of the negro as regards education, as follows:

"The commencement exercises of the Meharry Medical College, which we published yesterday, to an interested observer, were not simply impressive, but they set the mind of the thoughtful man going, and it rapidly travels over a wide field.

"Twenty-five years of a trial of so grave a question as the joint occupancy of a country by two distinct races of people is too short a time to unerringly point the result. Much, however, has been determined in this twenty-five years, especially when taken in connection with the previous relation of the two races. We do not propose to discuss or compare the intellectual powers of the races. That the negro is exhibiting more intellectual force than many supposed who saw him without education and with the information which reading only can give, is a fact which we suppose but few people would deny.

"For a people only twenty-five years out of slavery, the entire proceedings, and the surroundings of the commencement referred to, were deeply significant, and filled the mind with speculations of a grave character."

#### OHIO COLLEGE OF DENTAL SURGERY.

The forty-second annual commencement of the Ohio College of Dental Surgery was held at College Hall, Cincinnati, Ohio, on Wednesday, March 7, 1888. The following is the list of graduates:

Ohio—D. S. Anderson, H. J. Bosart, E. D. Broadwell, H. W. Cleland, D. M. Clement, Mrs. Jessie Dillon, M. H. Evans, A. B. Fletcher, H. E. Harlan, F. Y. Herbert, J. W. Hillman, E. D. Hinkley, C. B. Hussey, I. F. Hussey, C. G. Lockwood, H. H. Robinson, C. A. Schuchardt, J. B. Schunck, H. T. Smith, Mrs. Z. V. Swift, T. D. St. John, J. P. Tudor, S. M. Ulrey, Edwin Waddel, W. W. Wallace.

Indiana—N. B. Hartwell, M. A. Menges, B. C. Reid, E. J. Ward.

Kentucky—J. W. Cartmell, C. B. Clark, J. F. Rees, W. C. Shankland.

Illinois—O. T. Hanson, O. S. Mills, A. H. Rainey.

Kansas—B. L. Shobe, R. H. Updegraff.

Missouri—J. A. Henning, W. E. Scott.

Wisconsin—W. E. Gochenour, R. D. Rood.

Canada—W. A. Windell.

Iowa—J. F. Hardman.

Minnesota—R. B. Foster.

Pennsylvania—T. H. Sexton.

## DENTAL DEPARTMENT UNIVERSITY OF IOWA.

The sixth annual commencement of the Dental Department was held at the Opera House, Iowa City, on March 5, 1888. The list of graduates is as follows: A. E. Anger, Brooklyn, Iowa; J. E. Babcock, Watertown, Illinois; C. P. Beyer, Waverly, Iowa; F. T. Breene, Wilton Junction, Iowa; C. W. Cope, Atalissa, Iowa; E. S. Dawson, Maynard, Iowa; H. D. Hinkley, Lone Tree, Iowa; O. A. King, Blairstown, Iowa; J. A. Lovelady, Riverton, Iowa; J. A. Leonard, Fairfield, Iowa; H. V. McGregor, Mt. Pleasant, Iowa; M. S. Overfield, Deerfield, Iowa; C. S. Percival, Hillsboro, Iowa; A. B. Palmer, Grinnell, Iowa; A. L. Punton, Mt. Pleasant, Iowa; L. E. Roe, Columbus, Nebraska; A. L. Rist, Algona, Iowa; J. E. Swain, Iowa City, Iowa; C. H. Sippel, Charles City, Iowa; C. S. Searles, Moline, Iowa.

## MEDICAL AND DENTAL DEPARTMENTS OF THE UNIVERSITY OF TENNESSEE.

Graduates of the Dental Department: David H. Bell, Louisiana; Freddie L. Davidson, Tennessee; Robert C. Gordon, Alabama; Orton P. Hart, Illinois; W. B. Everett (Honorary), Tennessee; Benjamin Eugene Holcombe, South Carolina; William W. Hunt, Alabama; William T. Mowdy, Texas; James R. Pennington, Tennessee.

Prizes and medals were awarded to the following: Robert Russell Faculty Medal, William T. Mowdy; Faculty Second Honor, B. E. Holcombe; Faculty Third Honor, David H. Bell. •

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## DENTAL SOCIETIES.

SOUTHERN ILLINOIS DENTAL SOCIETY.—Centralia, Ill., April 10, 1888.

ALABAMA DENTAL ASSOCIATION.—Selma, Ala., April 10, 1888.

EIGHTH DISTRICT DENTAL SOCIETY OF NEW YORK.—Buffalo, N. Y., April 17, 1888.

KANSAS STATE DENTAL ASSOCIATION.—Topeka, Kas., April 24, 1888.

IOWA STATE DENTAL SOCIETY.—Iowa City, Iowa, May 1, 1888.

TEXAS STATE DENTAL ASSOCIATION.—Dallas, May 1, 1888.

ILLINOIS STATE DENTAL SOCIETY.—Cairo, Ill., May 8, 1888.

NORTHERN OHIO DENTAL ASSOCIATION.—Painesville, O., May 8, 1888.

DENTAL SOCIETY OF THE STATE OF NEW YORK.—Albany, N. Y., May 9, 1888.

NEBRASKA STATE DENTAL SOCIETY.—Beatrice, Neb., May 15, 1888.

MAD RIVER DENTAL SOCIETY.—Dayton, Ohio, May 19, 1888.

INDIANA STATE DENTAL SOCIETY.—Terre Haute, Ind., June 26, 1888.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.—OFFICERS, 1887-8.

*President.*—A. O. Hunt, Iowa City, Iowa.

*Vice-President.*—Thomas Fillebrown, Portland, Maine.

*Secretary.*—Junius E. Cravens, Indianapolis, Indiana.

*Treasurer.*—Allison W. Harlan, Chicago, Illinois.

*Executive Committee.*—Frank Abbott, Chairman, New York City ; J. Taft, Cincinnati, Ohio ; S. H. Guilford, Philadelphia, Pa.

*Committee ad interim.*—Jas. Truman, Chairman, Philadelphia, Pa. ; H. A. Smith, Cincinnati, Ohio ; T. W. Brophy, Chicago, Ill.

*Committee on Schools.*—Frank Abbott, New York City ; S. H. Guilford, Philadelphia, Pa. ; L. C. Ingersoll, Keokuk, Iowa ; R. B. Winder, Baltimore, Md. ; Thomas Fillebrown, Portland, Me.

List of Dental Schools at present constituting the membership of the National Association of Dental Faculties :

1. Baltimore College of Dental Surgery, Baltimore, Md.
2. Boston Dental College, Boston, Mass.
3. Chicago College of Dental Surgery, Chicago, Ills.
4. Harvard University, Dental Department, Cambridge, Mass.
5. Kansas City Dental College, Kansas City, Mo.
6. Minnesota Hospital College, Dental Dep't, Minneapolis, Minn.
7. Missouri Dental College, St. Louis, Mo.
8. New York College of Dentistry, New York City.
9. Ohio College of Dental Surgery, Cincinnati, Ohio.
10. Pennsylvania College of Dental Surgery, Philadelphia, Pa.
11. Philadelphia Dental College, Philadelphia, Pa.
12. St. Paul Medical College, Dental Department, St. Paul, Minn.
13. University of California, Dental Department, San Francisco, Cal.
14. University of Iowa, Dental Department, Iowa City, Ia.
15. University of Michigan, Dental Department, Ann Arbor, Mich.
16. University of Pennsylvania, Dental Department, Philadelphia, Pa.
17. Vanderbilt University, Dental Department, Nashville, Tenn.
18. Northwestern College of Dental Surgery, Chicago, Ill.
19. Louisville College of Dentistry, Louisville, Ky.
20. Indiana Dental College, Indianapolis, Ind.
21. Dental Department of Northwestern University, Chicago, Ill.
22. Dental Department of Southern Medical College, Atlanta, Ga.
23. Dental Department of University of Tennessee, Nashville, Tenn.
24. School of Dentistry of Meharry Medical Department of Central Tennessee College, Nashville, Tenn.

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THE DENTAL HOSPITAL in London is about establishing a post-graduate course. Lectures and demonstrations will commence in April, and will be open to all registered dentists.

## TWO OPINIONS.

THE NAME is not alway significant of the character. One would suppose from the title of a journal published in Buffalo that it was intended only as catalogue of goods; but no one can read the DENTAL ADVERTISER without feeling that they have been entertained at an intellectual feast. Every number is prepared with unusual discretion and skill.—*Items of Interest, for February, 1888.*

THE EDITOR of the DENTAL ADVERTISER, of Buffalo, has a very singular way of exhibiting his appreciation of professional courtesies shown him. He should have learned long ere this that men imbued with a professional spirit do not carry on a scientific discussion or attempt to advance professional knowledge by the use of personalities and scurrility. The *tu quoque* argument is seldom appealed to when any other is at hand.—*Independent Practitioner, for February, 1888.*

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DR. GEORGE CUNNINGHAM, in the *Dental Record*, says: "As I had prepared a paper on the so-called immediate method of filling root canals, I was considerably interested in witnessing the illustrative clinic by Dr. Conrad, of St. Louis. As this operation is so fully discussed in that paper, which will be published in the *Dental Record*, a further allusion to it is unnecessary, beyond the statement of the fact that several reputable and trustworthy practitioners are employing the method every day in actual practice, with satisfaction alike to themselves and their patients. The *Dental Review*, of Chicago, says:—'Immediate root-filling is the latest craze.' I trust the statistics which will appear in my paper will induce the able editors to revise that statement. In America the subject is receiving considerable attention in papers, discussions, and clinics."

Already an "able editor," who vigorously denounced the immediate method, has commenced to "hedge," and now writes "scientifically" on both sides of the question. "Verily the world do move."

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WE WERE RECENTLY informed that a scientific dentist of our acquaintance had his gold foil prepared expressly according to his ideas, and that he bought it by the pound! All of this is without doubt, absolutely true, and goes to show how science, coupled with honesty and strict integrity, will, in a short time, build up a practice that requires a pound of gold foil at one time to fulfil the demands of an enormous clientage.



SOME OF THE DENTISTS in this region are being stirred up by the International Tooth Crown Co., suits having been commenced against those using bridge work. The cases decided in New York, by Judge Wallace, are followed in this State by setting up for the bridge work claim, viz.: fifteen per cent. for the gross amount and a license fee of twenty-five dollars.

People generally suppose a license to be a grant for owners of patents to use and pay for the same, but the so-called license of this company is an agreement, with a penal clause of \$2,500, obligating the licensee to do all in his power to maintain and establish the validity of the bridge patent. Hence, if a man subscribed five dollars to a fund to appeal this case he might be liable for damages to the amount of \$2,500; some have signed, others have not, and the question now is, can they be compelled to sign an agreement, when they bargained for a license. Brother dentist, you had better find out another way, or give up the bridge work, and I think you had better give it up anyhow. If you don't now, you soon will wish you had, for more reasons than that you don't like the Tooth Crown Co.'s license. One fellow, not caring to see the agent, referred him to his lawyer, who advised him to settle, and he did so, and then asked his lawyer for his bill, and was somewhat astonished by a bill of one hundred dollars for his services. He thinks the frying pan pretty nearly as good as the fire.—“*Central*,” *Newark, N. J., in Archives of Dentistry.*

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ORIGIN OF CÆSAREAN SECTION.—Julius Cæsar first attracted attention through the Roman papers by calling the attention of the medical faculty to the now justly celebrated Cæsean operation. Taking advantage of the advertisement thus attained, he soon rose to prominence, and flourished considerably from 100 to 44 B. C., when a committee of representative citizens and property owners of Rome called upon him, and on behalf of the people, begged leave to assassinate him as a mark of esteem. He was stabbed twenty-three times between Pompey's Pillar and 11 o'clock, many of which were mortal. This account of the assassination is taken from a local paper and is graphic, succinct and lacks the sensational elements so common and so lamentable in our own time. Cæsar was the implacable foe of the aristocracy, and refused to wear a plug hat up to the day of his death. Sulla once said, before Cæsar had made much of a showing, that some day this young man would be the ruin of the aristocracy, and twenty years afterward, when Cæsar sacked, assassinated and holocausted a whole theological seminary for saying “eyther” or “nyether,” the old settlers recalled what Sulla had said.

Cæsar continued to eat pie with a knife, and in many other ways to endear himself to the masses until 68 B. C., when he ran for Quæstor.—*Bill Nye.*

DR. GEORGE S. MEIGS, a dentist, committed suicide on January 23, at his office, 133 West Thirty-fourth street, N. Y. His partner, Dr. Evans, entered the office shortly after noon and found Dr. Meigs lying dead on the sofa, with his overcoat on and his hat on the floor beside him. On a stand were a bottle and a glass containing a small quantity of prussic acid. Mrs. Margaret Meigs, his wife, was summoned from their residence, and upon searching the clothing of the dead man a letter addressed to her was found. In the letter he explained that, although his practice was large a year ago it had dwindled away, and on Saturday he had found himself unable to pay his rent. This made him despondent, and he resolved to take his life. He had procured the prussic acid, he said, on a prescription from Dr. Wark. He advised his wife not to grieve over his death, and to marry again. Dr. Meigs was a native of Vermont, and about 43 years of age. He graduated in 1886, from the New York College of Dentistry. He was a relative of General Meigs, and the Meigs sisters, singers, were his sisters.— *The Doctor*.

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DR. TALBOT'S NEW BOOK on irregularities seems to have stirred up a tempest that is likely to result in an Illinois cyclone. According to the *Archives of Dentistry*, Dr. John J. R. Patrick, of Belleville, seems grieved because his name was omitted from the list of gentlemen, mentioned in the preface, who gave valuable information in the preparation of the book; yet Dr. Talbot has honored him with two pages of matter describing the Patrick method, and one illustration. Dr. Patrick sent a communication to the *Archives of Dentistry* on the subject of Dr. Talbot's book, but the meaning of the communication is rather obscure, except the portion which relates to copy-right laws. We infer that Dr. Patrick considers himself slighted because the entire book was not devoted to his particular method. Perhaps, however, Dr. Patrick feels most aggrieved by the neglect of the author to append the requisite number of "Js" to his name. To appease all, Dr. Talbot should, in the next edition, ornament his preface with the names of every person mentioned in the body of the work. It would be interesting reading.

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IN USING STEEL JACK-SCREWS the corrosive effect of the oral secretions may be prevented, and the screws nicely lubricated, by immersing them in hot paraffine. This should be done every three or four days.— *Odontological Journal*. For the benefit of the editor of the above named journal, we would state that jack-screws which do not need immersion in paraffine to prevent rusting, are made by the B. D. M. Co., of this city.

OF INTEREST TO GYNÆCOLOGISTS.—A North Carolina paper of recent date states that a surgeon of that State once acquired a great reputation by successful amputation of a negro's leg; so other jealous surgeons naturally took to cutting off negroes' legs. If a negro had a sore on his heel, his leg came off. If he had rheumatism, his leg came off. If he broke his leg, it came off. If he sprained his ankle, his leg came off. If he stumped his toe, his leg came off. From 1814 to 1820 it was as common to cut off a negro's leg as it is now to give quinine for malarial manifestations.—*Exchange*.

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DR. E. PARMLY BROWN and his son, Parmly Brown, of Flushing, L. I., were fined \$15 and \$5, respectively, for shooting a dog which had bitten young Parmly. The doctor immediately commenced a suit for \$5,000 for malicious prosecution. If the facts are as related, the powder and ball, and the money for the fines, were well invested.—*The Doctor*.

We also read that Dr. Brown has gained considerable notoriety by making a set of teeth for his cow. This certainly was far from being a cowardly undertaking.

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THE LUXURY of a well equipped office is well illustrated by an advertisement in a Milwaukee paper. The advertiser says that he "Has all the perfected apparatus for Modern Dental Work, and makes a specialty of Low's No-Plate, or gold bridge-work; Land's Porcelain Plates and Crown; Hurd's Vitalized Air for Painless Extraction; Johnson's New Process Plates that are put in as soon as teeth are extracted; Gold Lined Rubber Plates that do not irritate the mouth."

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LAST TUESDAY and Wednesday our dentist, C. D. Barney, extracted one hundred and fifty-seven teeth, and not much of a day for extracting either.—*Parish Sun, (New York State)*.

This does not quite equal the extractions of Fra Orsenico per day, as described in an article headed "Benevolent Dentistry," but does pretty well for a town of the size of Parish.

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THE MANY FRIENDS of Dr. W. C. Barrett will regret to learn that he was "confined to his home by illness, and therefore unable to be present" at the late meeting of the First District Dental Society in New York. So says the *Odontographic Journal*.

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## BOOK NOTICES.

CYCLOPEDIA OF AMERICAN CONTEMPORARY BIOGRAPHY. Including notices of men and women of the United States prominent in the life of to-day. To be issued in Ideal volumes of about 550 pages each, Brevier type, including numerous portraits. To be revised and re-issued as often as annually. Subscribers to early editions to have the privilege of exchanging for last editions by paying half price in cash. Volumes bound in fine cloth; price, \$1.00; postage 12c. *Specimen pages free.* New York: John B. Alden, Publisher, 393 Pearl Street.

OUR LITTLE MEN AND WOMEN, for 1888. One dollar a year. Five cents for a sample copy. D. Lothrop Company, Publishers, Boston.

This is a capital publication for a dentist's reception room, affording no end of pleasure to the little patients. The aim of this magazine is to interest children just at the time they begin to read for themselves and lead them along for a year or two with pictures and stories and pleasant tasks, so pleasant as to make them forget the task part altogether. The following outline includes the larger topics of the year: Pocahontas teaches a little early American history through the year. A French story, Susanna's Auction, full of amusement. A story a month, entitled Laura's Holidays, suggests to other little girls what they can do on holidays. A story a month on Tiny Folks in Armor; which means beetles. A flower poem in every number. Buffy's (six) Letters to his Mistress. Buffy is a coon-cat. Six Mexican stories on Little People of the Plaza; also about some Mexican animals. Besides there are many, too many to tell of, stories short and bright and unexpected. With all this entertainment of picture and humor there is a serious purpose all through implied in the name, *Our Little Men and Women*. It is to teach and lead the children to take reading for profit; but pleasure comes first as it ought.

BABYLAND, 1888. Fifty cents a year; a copy sent for five cents. D. Lothrop Company, Publishers, Boston.

In general it will be about the same as in '87. Nothing in *Babyland* ever pleased more people than Finger-play rhymes and pictures. They have even been sought by Kindergartners here in Boston and elsewhere; and the author has personally taught them. Six of the '88 *Babylands* will contain new Finger-plays. The other six will have a series of baby stories in rhyme about Crickets, how they manage their babies, with pictures. Me and Toddlekins is a baby-cat story all through the year by Margaret Johnson, with pictures also by Margaret Johnson. There will also be a lot of jingle bits and story bits and picture bits, so many as to make you wonder where the next year's entertainment is to come from.

VICK'S FLORAL GUIDE. In the way of a Catalogue, Vick's Floral Guide is unequalled in artistic appearance, and the edition of each year that appears simply perfect, is surpassed the next. New and beautiful engravings, and three-colored plates of flowers, vegetables, and grain, are features for the issue of 1888. It is in itself a treatise on horticulture, and is adapted to the wants of all who are interested in the garden or house plants. It describes the rarest flowers and choicest vegetables. Vick's Floral Guide, price only 10 cents, including a certificate good for 10 cents' worth of seeds. Published by James Vick, Seedsman, Rochester, N. Y.

DENTAL METALLURGY: A manual for the use of dental students, by Charles J. Essig, M. D., D. D. S., Professor of Mechanical Dentistry and Metallurgy in the Dental Department of the University of Pennsylvania. Second Edition, revised. Philadelphia: The S. S. White Dental Mfg. Co., 1888. Price, \$1.75.

On the appearance of the first edition of the above named work, we gave it a favorable notice, as it deserved; at the same time a doubt crossed our mind as to the advisability



of publishing such a work, in view of the almost total elimination of metal work from modern dental offices. Since the appearance of the first edition, however, gold crown and bridge-work has made monstrous strides in professional favor, and has led the progressive members of the profession to seek for metallurgic knowledge. This fact has exhausted the first edition, and created a demand for a second one. The work has therefore been carefully revised without material enlargement, the more recent improvements in the reduction of metals and the formations of alloys and amalgams used in dentistry, being among the most important additions.

Presumably this book is written "for the use of students," but we hope the modest declaration of the author will not deter any healthy old fogey from adding it to his library.

"WOMAN." A monthly magazine published by Woman Publishing Co., 122 Nassau Street, New York. \$2.75 a year.

"Woman" is the only magazine of the kind, and stands alone in being devoted to all the interests and requirements of women. The March number of "Woman" more than fulfils the promise of that excellent magazine's earlier issues. In literary quality "Woman" stands second to no periodical of the day, and in its illustrated features, as well as its mechanical construction, it has already asserted a footing for itself in close companionship with the best of the older magazines. A most excellent periodical for a dentist's reception room.

IRREGULARITIES OF THE TEETH AND THEIR TREATMENT. By Eugene S. Talbot, M. D., D. D. S., Professor of Dental Surgery in the Woman's Medical College; Lecturer on Dental Pathology and Surgery in Rush Medical College, Chicago. With 152 illustrations. Philadelphia: P. Blakiston & Co., 1012 Walnut Street, 1888. Price, \$2.00.

Dr. Talbot first came into prominence by adopting a modification of the "Coffin Spring," for regulating teeth. Since then he has made a specialty of the method, and the present work is the result of experience gained in that line. The author does not limit his work to his own method, but describes and illustrates nearly all the recent known methods of other workers in regulating. We believe this is the first work exclusively devoted to this subject. The possession of this book will save many an anxious thought on a sometimes vexatious subject, as there is scarcely a case that cannot be benefited by the application of some one of the various appliances described.

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## BOOKS RECEIVED.

THIRD ANNUAL REPORT OF THE BOARD OF DENTAL EXAMINERS OF THE STATE OF CALIFORNIA, 1887.

SHOULD PHYSICIANS BE PHARMACISTS? By Charles L. Mitchell, M. D. Reprinted from the *Philadelphia Medical Times* for December 30, 1887.

PROCEEDINGS OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES at the Fourth Regular Meeting, at Washington, D. C., September 3, 5 and 6, 1887.

L'AVENIR DE L'ART DENTAIRE EN FRANCE, (Étude critique sur le projet de loi de 1886,) par E. Lecaudey, Médecin-dentiste, directeur honoraire de L'École dentaire de Paris, Président de L'Association générale des dentistes de France.—Paris École Dentaire, 23 Rue Richer, 1888.

THE INCONSISTENCY OF OUR CODE OF DENTAL ETHICS. By Dr. C. H. Land, Detroit, Mich.

## DENTAL PATENTS.

ISSUED FOR THE QUARTER PRECEDING THE DATE OF THIS JOURNAL.

- 374,572—December 13, 1887.—ARTIFICIAL TOOTH.—Stephen T. Beale, Jr., Philadelphia, Pa.
- 374,585—December 13, 1887.—DENTAL FLASK.—Walter S. Curtis, West Randolph, Vt.
- 374,831—December 13, 1887.—INHALER FOR ANÆSTHETICS.—Walter W. Harrington, Carrollton, Ohio.
- 375,167—December 20, 1887.—FILLING TEETH.—Charles H. Land, Detroit, Mich.
- 375,241—December 20, 1887.—DENTAL FOIL.—Richard S. Williams, New York, N. Y.
- 375,427—December 27, 1887.—DENTAL SYRINGE.—William H. Richards, Knoxville, Tennessee.
- 375,827—January 3, 1888.—DENTAL PENCIL.—John A. McClelland, Louisville, Ky.
- 375,854—January 3, 1888.—DENTAL ENGINE.—Henry C. Register, Philadelphia, Pa.
- 376,016—January 3, 1888.—DENTAL CHAIR.—Dewell Stuck, Big Rapids, Mich.
- 376,437—January 17, 1888.—RUBBER DAM CLAMP.—James H. Hatch, San Francisco, California.
- 376,548—January 17, 1888.—DENTAL MATRIX.—John H. Reed, Lancaster, Wis.
- 376,581—January 17, 1888.—DENTAL PLUGGER.—Benjamin S. Byrnes, Memphis, Tenn.
- 376,603—January 17, 1888.—ARTIFICIAL TOOTH CROWN.—James E. Low, Chicago, Ill.
- 376,653—January 17, 1888.—DENTAL MANDREL.—Charles W. F. Holbrook, Newark, N. J.
- 376,889—January 24, 1888.—DENTAL GOLD PELLET PACKAGE.—Edward G. Kearsing, Spring Valley, N. Y.
- 377,177—January 31, 1888.—RUBBER DENTAL PLATE.—Ezra W. Talbott, Napoleon, O.
- 377,855—February 14, 1888.—ARTIFICIAL TOOTH CROWN.—Cornelius S. Hurlbut, Springfield, Mass.
- 377,970—February 14, 1888.—ARTIFICIAL TOOTH.—Thomas S. Waters, Baltimore, Md.
- 377,984—February 14, 1888.—DENTAL PLUGGER.—William G. A. Bonwill, Philadelphia, Pennsylvania.
- 378,015—February 14, 1888.—ARTIFICIAL TOOTH.—John W. Moffitt, Philadelphia, Pa.
- 378,033—February 14, 1888.—INHALER.—Basil W. Wilkerson, Baltimore, Md.
- 378,204—February 21, 1888.—DENTAL ENGINE.—William B. Mann, Baltimore, Md.
- 378,433—February 28, 1888.—DENTAL CHAIR.—John W. Cooper, Boston, Mass.
- 378,920—March 6, 1888.—DENTAL PLUGGER.—William G. A. Bonwill, Philadelphia, Pa.
- 10,907—March 6, 1888, (Re-issue).—ELECTRICAL APPARATUS FOR DENTAL OPERATIONS.—Charles A. Eisenhart, York, Pa.

## Another "NEW DEPARTURE."

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A SENSITIVE POINT will do this, if read by your patrons, thereby saving you valuable time and great annoyance. It is presented after thirty years' successful dental practice, to introduce a subject too much neglected by our profession. It answers questions, makes suggestions, and gives advice to our patients on matters relating to the teeth. Send 10 cents for the book—32 pages—and terms; 1,000 copies, neatly printed in your own name, free. *It will pay you to investigate this subject.*

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- One Brass-Bound Mahogany Case, 16½ x 11 x 4¼ inches, as shown on page 212 S. S. White's Catalogue. Without trays. Cost, \$20.00; will sell for \$5.00.
- One Rolling Reclining Invalid Chair, in perfect order. Cost, \$36.00; sell for \$25.00.
- One Codman & Shurtleff Floss Holder. 25 cents.
- One Novelty Microscope. 50 cents.
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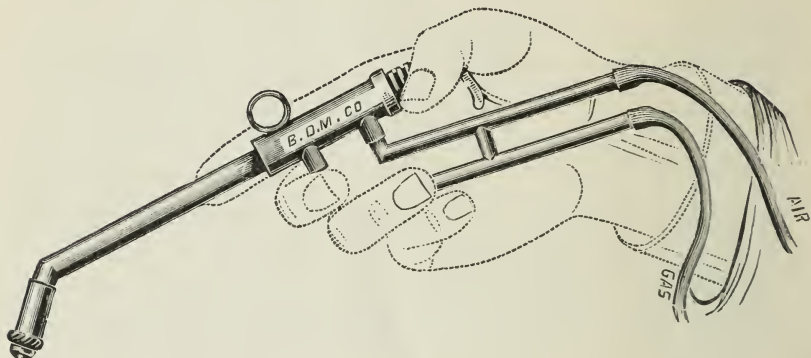
- One Tyson's Cell Doctrine. 75 cents.
- One Huxley's Elementary Lessons in Physiology. 50 cents.
- One Cleveland's Pronouncing Medical Lexicon. 75 cents.
- One Sewill's Dental Anatomy. \$1.12.
- One Sansom on Chloroform. \$1.25.
- One Beale's How to Work the Microscope. \$4.00.
- One Paget's Surgical Pathology. \$4.00.
- One Anatomist's Vade Mecum, Wilson. \$3.00.
- One Carpenter's Human Physiology, 1868. \$3.00.
- One Dunglison's Human Physiology, 2 Vols., 8th edition. \$4.00.
- One Heath's Injuries and Diseases of the Jaws. \$3.00.

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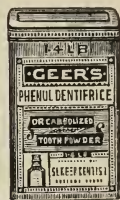
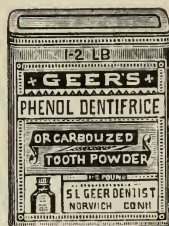
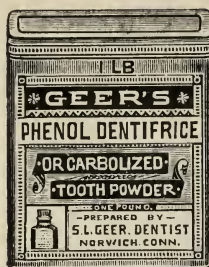
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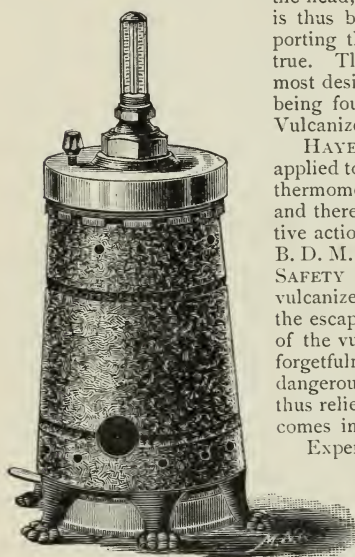
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# THE WHITNEY VULCANIZER.

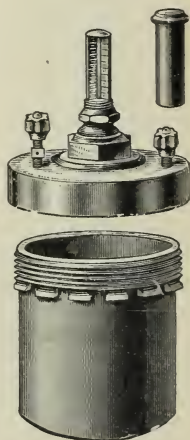
THE WHITNEY VULCANIZER was invented by the late Dr. B. T. Whitney more than twenty-five years ago. It consists of a copper pot, four inches in diameter, on which a brass head is screwed; a steam-tight joint being made by means of a rubber-packing in the head, which bears upon the edge of the pot. The pressure is thus brought evenly upon the parts, the screw thread supporting the pot and preventing it from being drawn out of true. This simple screw-fastening has been found to be the most desirable for dental vulcanizers, the best proof of its merits being found in the large and continued sale of the Whitney Vulcanizer.



HAYES' PATENT MERCURY BATH is applied to this vulcanizer, the bulb of the thermometer being immersed therein and thereby protected from the destructive action of the steam upon it. The B. D. M. Co.'s SAFETY APPARATUS and SAFETY DISK is also applied to this vulcanizer. This gives way and allows the escape of steam, if the temperature of the vulcanizer should be allowed, by forgetfulness or oversight, to rise to a dangerous extent. The pressure being thus relieved, a disastrous explosion becomes impossible.

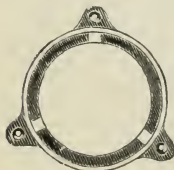
Experiments have shown a variation of as much as twenty degrees in the temperature as indicated by the thermometer, depending upon the presence or absence of air in the vulcanizer: the mixture of air

and steam not allowing the heat to pass freely through it to the thermometer. A BLOW-OFF VALVE has therefore been added, by means of which the air can be expelled from the vulcanizer when it is heated, and this source of irregularity in the indications of the thermometer removed.



NO. 3, WHITNEY STRAIGHT WRENCH.

recommended. The bed-plate is fixed to the bench, in which a hole is cut for the reception of the vulcanizer pot. These are furnished with the vulcanizer instead of the round and straight wrenches, Nos. 3 and 8, without any advance in price. If a hole in the bench is not practicable, the Raised Bed-plate, No. 16, which is illustrated on a succeeding page under the head of "Vulcanizer Wrenches," will be furnished at an advance in price of 75 cents.



NO. 9, BED-PLATE



NO. 8, WHITNEY ROUND WRENCH.

The heat is supplied by either gas, alcohol or kerosene. Full descriptions and cuts of the different forms of heating apparatus will be found on another page.

For kerosene, a special pattern of stove is used, which is supplied at the same price as gas or alcohol heating apparatus. It has a four-inch wick and will be found an efficient heater, much preferable to those heretofore used. This stove will always be



NO. 10, BED-PLATE WRENCH.



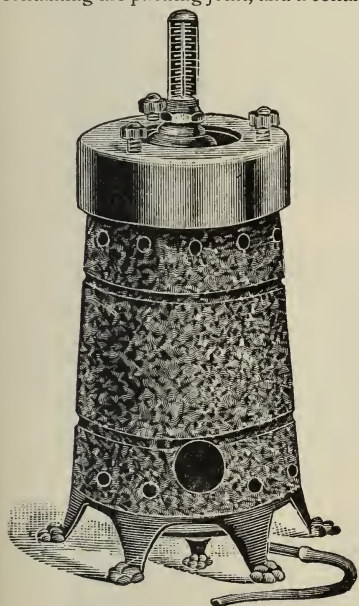
furnished with this vulcanizer, unless other heating apparatus is specified. The Union Stove, if ordered, will be furnished at an advance from the prices given below, of 50 cents for the No. 1, or \$1.00 for the No. 2 stove.

#### PRICES.

No. 1 Vulcanizer, for one flask, Gas, Alcohol or Kerosene, . . . . .	\$12.00
No. 2 Vulcanizer, for two flasks, Gas, Alcohol or Kerosene, . . . . .	14.00
No. 3 Vulcanizer, for three flasks, Gas, Alcohol or Kerosene, . . . . .	16.00

## THE HAYES VULCANIZER.

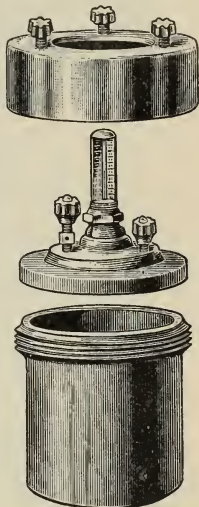
THE HAYES COPPER BOILER consists of a copper pot four inches in diameter, a cover containing the packing joint, and a collar, which screws upon a threaded ring which encircles the pot, and bears upon the cover to tighten the joint by means of three set-screws, which are plainly shown in the engraving. This fastening has proved to be the most substantial of any, and can be recommended as *absolutely steam-tight*.



THE IRON CLAD BOILER is made precisely like the Copper Boiler above described, excepting that the copper pot is covered by a shell of malleable iron strong enough to withstand many times the pressure of steam used in vulcanizing. It may, therefore, be safely used, notwithstanding the weakening of the copper by corrosion. It is only made of 4 inches diameter, and for one, two, or three flasks.

The thermometer bulb is immersed in HAYES' PATENT MERCURY BATH, by which it is perfectly protected from the corrosive action of the steam.

The B. D. M. Co.'s SAFETY APPARATUS and a BLOW-OFF VALVE form part of the equipment of the Hayes Vulcanizers.



The SAFETY APPARATUS contains a thin copper disk, which will give way if the steam pressure is allowed to rise very far above the vulcanizing point. The BLOW-OFF VALVE should be opened, and the air expelled from the vulcanizer while it is heating. Experiments have demonstrated the *absolute necessity* of taking this precaution, to insure uniform indications from the thermometer.

The Hayes Wrench, No. 17, here illustrated, answers for closing the Hayes Vulcanizer and also for the flasks.

Either Gas, Alcohol or Kerosene heating apparatus is furnished as required, at the same prices given below. They are illustrated on another page. A SPECIAL PATTERN OF KEROSENE STOVE is now furnished with our vulcanizers, without the advance in price heretofore made in furnishing the Union Stove. It will always be furnished with these vulcanizers unless other heating apparatus is specified. The Union Stove, if ordered, will be extra, viz.: No. 1, 50 cents; No. 2, with two wicks, \$1.00.



NO. 17, HAYES WRENCH

#### PRICES.

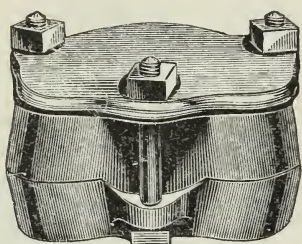
No. 1, Copper, Gas, Alcohol or Kerosene, . . . . .	\$12.00
No. 2, Copper, Gas, Alcohol or Kerosene, . . . . .	14.00
No. 3, Copper, Gas, Alcohol or Kerosene, . . . . .	16.00
No. 1, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	13.00
No. 2, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	15.00
No. 3, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	17.00

# • DENTAL FLASKS •



A variety of Flasks for vulcanite and celluloid work are illustrated below. The cuts give a good idea of their appearance and construction, and their inside dimensions in inches are also given. The measurements are given in the following order: 1st. From front to back; 2d. From side to side; 3d. Height.

Other patterns, in stock, but not illustrated, are enumerated in the "Condensed Price List" at the end of this pamphlet.



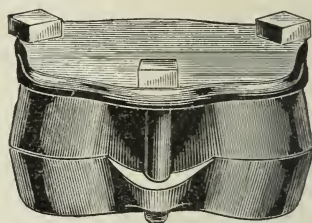
No. 1. WHITNEY FLASK.

NEW STYLE

Size,  $2\frac{1}{2} \times 3\frac{5}{16} \times 1\frac{7}{16}$ .

This is the flask usually furnished with the Whitney Vulcanizer. The bolts pass through lugs on the lower section, and holes in the cover, and receive nuts, by which the flask is closed.

PRICE—Malleable Iron, . . 80 cents.



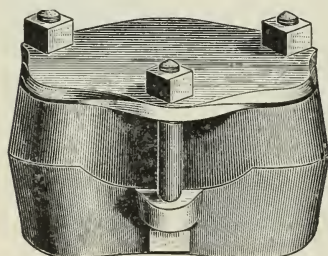
No. 2. WHITNEY FLASK.

OLD STYLE.

Size,  $2\frac{1}{2} \times 3\frac{5}{16} \times 1\frac{7}{16}$ .

Made from the same patterns as the No. 1, the difference being in the method of attachment of the bolts. The lugs on the lower section are tapped, and the bolts screw into them, dispensing with nuts.

PRICE—Malleable Iron, . . 80 cents.



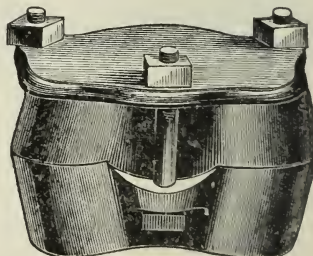
No. 3. WHITNEY FLASK.

(LARGE.)

Size,  $2\frac{3}{4} \times 3\frac{5}{8} \times 1\frac{3}{4}$ .

Of extra width and depth; intended for large lower plates and other pieces for which the ordinary flasks have not the requisite capacity. It will go into a vulcanizer  $3\frac{7}{8}$  inches diameter if turned edgewise. It uses the ordinary Whitney Bolt.

PRICE—Malleable Iron, . . 80 cents.



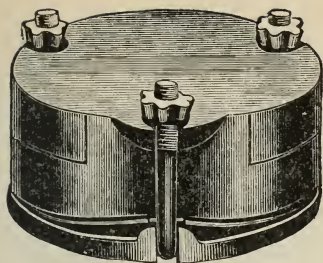
No. 4. WHITNEY FLASK.

(DEEP.)

Size,  $2\frac{3}{8} \times 3\frac{3}{16} \times 1\frac{11}{16}$ .

For flasking partial plates, when it is desired to pack the rubber from the lingual side, and retain the teeth in close contact with the model. Also for repairing plates. Made from the same patterns as the ordinary Whitney Flask, with extra deep lower section.

PRICE—Malleable Iron, . . 80 cents.

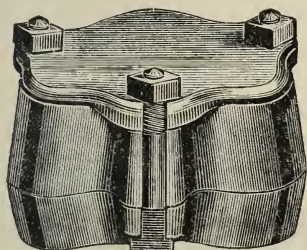


No. 5. HAYES FLASK.

Size,  $2\frac{3}{4} \times 3\frac{1}{4} \times 1\frac{3}{8}$ .

The bolts are hinged to a circular plate, forming a "Clamp," by which the flask is closed. By slackening the nuts, the bolts can be swung outwardly to release the flask from the clamp. Made either in malleable iron or brass. The clamp is always malleable iron.

PRICE—Brass, with Clamp, . . \$1.50  
Malleable Iron, . . . 1.00  
Clamp, separately, . . . .50

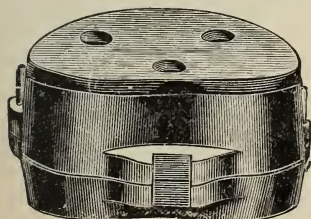


No. 7. WHITNEY SLOT FLASK.

Size,  $2\frac{1}{2} \times 3\frac{1}{4} \times 1\frac{5}{8}$ .

This flask has a deeper ring than the No. 1 Whitney, but is of the same dimensions in other ways. The bolts are held in between ribs, as shown, and are removable by slackening the nuts. The ribs support the cover and lower section, and the flask retains its shape well if made in brass.

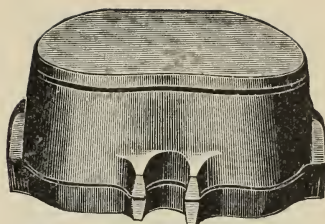
PRICE—Brass, . . . . . \$1.25  
Malleable Iron, . . . . .80



No. 9. CELLULOID FLASK.

(SHALLOW.)

Size,  $1\frac{5}{8} \times 3\frac{1}{8} \times 1\frac{1}{2}$ .

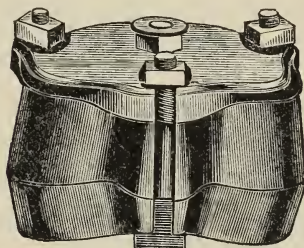


No. 6. EDSON FLASK.

Size,  $2\frac{3}{4} \times 3\frac{7}{8} \times 1\frac{9}{16}$ .

Designed by Dr. Edson, for use with his vulcanizer. It is closed by the stirrup mechanism, which forms one of the peculiar features of the Edson Vulcanizer, and consequently has no bolts. It has very long and heavy guide-pins, and is intended for use with either vulcanite or celluloid.

PRICE—Brass, . . . . . \$1.50  
Cast Iron, . . . . . 1.00

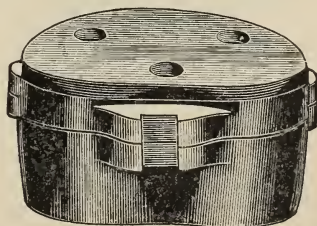


No. 8. BROWN VULCANITE FLASK.

Size,  $2\frac{1}{2} \times 3\frac{1}{4} \times 1\frac{5}{8}$ .

This flask is of the same dimensions as the No. 7. It has, however, a loose plate in the lower section, a smart rap upon which dislodges the plaster entire. The flask can be lifted out of the vulcanizer by the lug upon the cover. See No. 12 Wrench, page 20.

PRICE—Brass, . . . . . \$1.25  
Malleable Iron, . . . . .80



No. 10. CELLULOID FLASK.

(DEEP.)

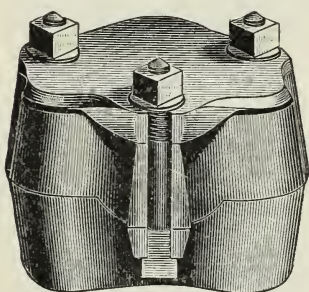
Size,  $2\frac{5}{8} \times 3\frac{1}{8} \times 1\frac{1}{2}$ .



### No. 9. CELLULOID FLASK.

Of extra large size, with long guide pins for celluloid. It can be used in the Edson Vulcanizer.

PRICE—Brass, . . . . . \$1.50  
Cast Iron, . . . . . 1.00



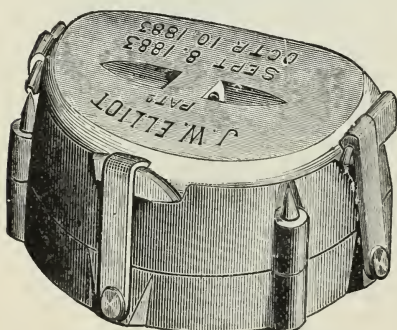
### No. 13. SLOT FLASK.

(DEEP.)

Size,  $2\frac{1}{2} \times 3\frac{1}{4} \times 1\frac{7}{8}$ .

The upper part of this flask is the same in size as the No. 7, the lower section being about a quarter of an inch deeper. The same bolts are used as with the No. 7.

PRICE—Brass, . . . . . \$1.25  
Malleable Iron, . . . . . .80



### No. 16. ELLIOT FLASK.

PAT. SEPTEMBER 18, 1883.

Size,  $2\frac{3}{4} \times 3\frac{1}{4} \times 1\frac{5}{8}$ .

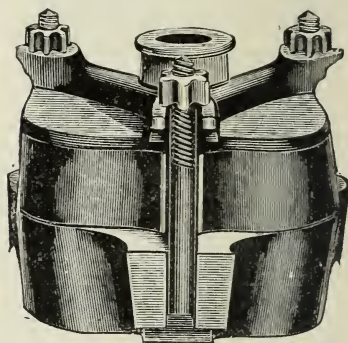
The clasps swing over inclines or lugs on the cover, and hold the parts of the flask tightly together. The lugs are put below the surface, that the flask may be placed either side up. The guide pins are steel, full size, and parallel, so that the parts are sure to return to place. The flask can be carried when hot by a wire hook, which can be passed through the hole in a section of the cover from the two opposite depressions. (See engraving.) The flask is used for rubber or celluloid. Made in brass only.

PRICE—Elliot Flask, Brass, . . . . . \$1.50

### No. 10. CELLULOID FLASK.

Size the same as the No. 9, but with shallow ring and deep bottom: for use when the teeth are to be retained upon the model.

PRICE—Brass, . . . . . \$1.50  
Cast Iron, . . . . . 1.00

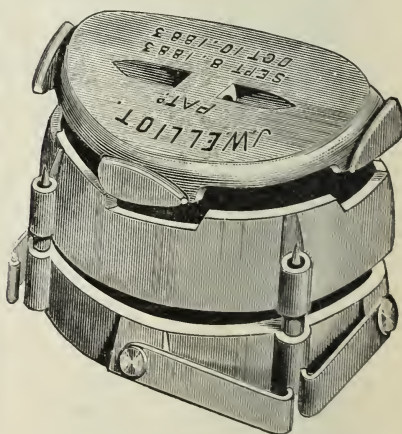


### No. 14. BROWN CELLULOID FLASK.

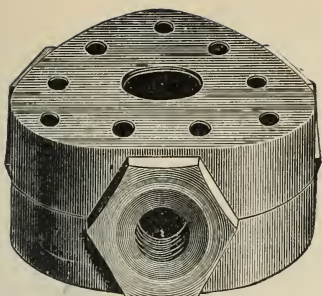
Size,  $2\frac{7}{8} \times 3\frac{1}{2} \times 1\frac{7}{8}$ .

For Brown's Celluloid Apparatus. Very strong, heavy and capacious. This flask has a loose plate in the lower section, by rapping on which the plaster is removed entire.

PRICE—Malleable Iron, . . . \$2.00



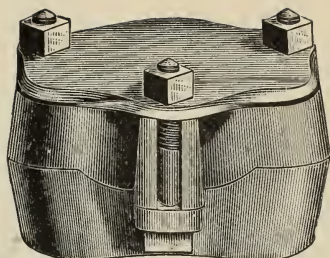




NO. 17. HOWELL FLASK.

Used only with the Howell Packer. Made from new patterns, and is considerably larger than the original Howell Flask.

PRICE—Cast Iron, . . . . . \$2.50

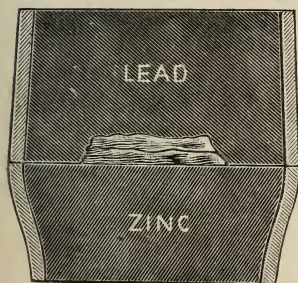
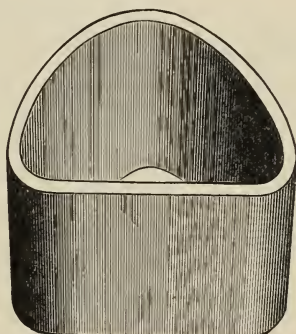
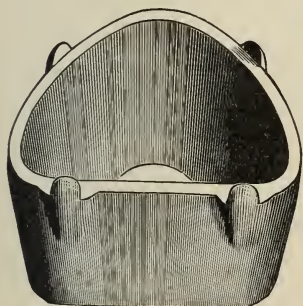


NO. 18. WHITNEY FLASK.  
(LARGE.)

Made in brass only, with ribs on the ring to support the cover. Same size as the No. 3.

PRICE—Brass, . . . . . \$1.25

## BAILEY MOULDING FLASKS.



SECTIONAL VIEW.

For making metallic dies and counters for swaging gold plates. Prepare a thin plaster cast, trim it to give the proper "draft" at the edges, varnish and dry it. Then place it on a board, with the large ring around it. Ram the ring full of moulding sand, reverse it and draw the pattern. Put on the small ring and fill it with melted zinc. Shake the sand out of the large ring, and fill it with lead. To prevent adhesion, smoke the surface of the zinc die before pouring the lead.

Made in two sizes,  $2\frac{5}{8} \times 3\frac{1}{4}$  inches and  $3 \times 3\frac{3}{4}$  inches.

PRICE.

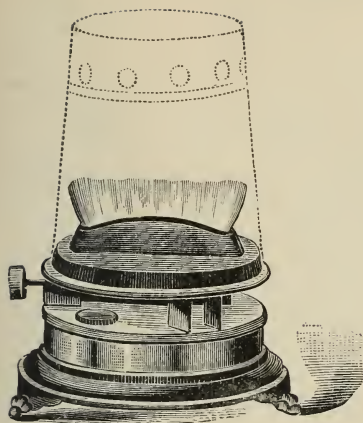
Bailey Moulding Flasks, each, . . . . . 50 cents.

FOR SALE BY THE

BUFFALO DENTAL MANUFACTURING CO.



## KEROSENE HEATING APPARATUS. FOR DENTAL VULCANIZERS.

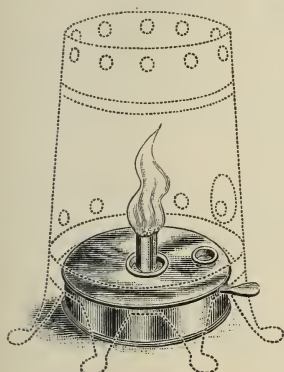


This stove is of our own design, and is especially adapted to vulcanizer work. It has a four-inch wick, and will be found to have ample power. This stove is now furnished with all of our vulcanizers, when ordered "for kerosene," without advance in price. As the size of the jackets varies for different vulcanizers, it is important, when ordering, to state the kind of vulcanizer the stove is to be used with, and its size: whether one, two or three case.

### PRICE.

Kerosene Heating Apparatus, complete,	\$1.50
Kerosene Lamp,	.75
Ring,	.10
Cone-Plate,	.25
Jacket,	.40

## ALCOHOL HEATING APPARATUS. FOR DENTAL VULCANIZERS.



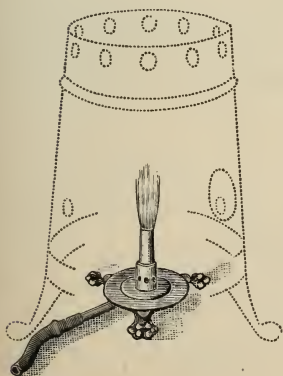
This heating apparatus was designed by the late Dr. B. T. Whitney about twenty-five years ago, and remains the same in its general features as when it left his hands, although improvements have been made from time to time in minor points. The wick tube is five-eighths of an inch in diameter. The wick is moved to adjust the size of the flame by means of the lever which projects from the side of the lamp body.

The lamp is placed under a cast iron stand, which protects it from the radiated heat, and the vulcanizer is supported by the galvanized iron jacket shown in the outline.

### PRICES.

Alcohol Heating Apparatus, complete,	\$1.50
Alcohol Lamp,	.75
Stand,	.35
Jacket,	.40

## GAS HEATING APPARATUS. FOR DENTAL VULCANIZERS.



The jacket and stand used in this form of heating apparatus are the same as with alcohol: the Laboratory Gas Burner being substituted for the alcohol lamp.

The gas burner is available for general purposes about the laboratory or office when not in use for vulcanizing. With the addition of the spider, as illustrated on another page, it can be used for heating water.

### PRICES.

Gas Heating Apparatus, complete,	\$1.50
Laboratory Gas Burner,	.75
Stand,	.35
Jacket,	.40

# R. S. WILLIAMS,

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MANUFACTURER OF

STANDARD COHESIVE GOLD FOIL,  
STANDARD MEDIUM GOLD FOIL,  
STANDARD SOFT GOLD FOIL,  
STANDARD CORRUGATED GOLD FOIL,  
STANDARD CRYSTAL SURFACE GOLD (Rolled),  
STANDARD UNTRIMMED GOLD FOIL (Cohesive),  
STANDARD UNTRIMMED GOLD FOIL (Soft).

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## STANDARD · GOLD · CYLINDERS.

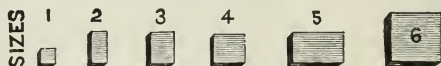
Styles A, B, and C.



NON-TIPPING GOLD CYLINDERS (Cohesive),  
NON-TIPPING GOLD CYLINDERS (Soft),  
BURNISH GOLD CYLINDERS (Cohesive),  
BURNISH GOLD CYLINDERS (Soft).

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## RECTANGULAR · GOLD · PELLETS.



NON-TIPPING GOLD BLOCKS,  
FOLDED GOLD FOIL,  
GOLD and PLATINA, for Filling (Folds and Rolled).

---

ELECTRIC GOLD, (Cohesive)—Always Reliable.

---

STANDARD TIN FOIL and CYLINDERS,  
GOLD LIGATURE WIRE,  
AMALGAM ALLOY No. 1.

---

GOLD PLATE, SOLDERS, WIRE, Etc.,  
PLATINA PLATE and WIRE (Hard and Soft,)

FOR CROWN AND BRIDGE WORK.

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115 WEST 42D ST., NEW YORK CITY.

[ja88-1y]



# New · Specialties · in · Gold FOR FILLING.

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• • • • •

## SOFT · BURNISH · GOLD · CYLINDERS.

---



Sizes,  $\frac{1}{8}$ , 1, 2, 3, and assorted.

These cylinders are made with particular reference to the new system of packing gold with engine burnishers.

They also have excellent qualities for use with Mallet or Hand Pluggers.

A prominent New York operator says: "As a soft gold they surpass anything I ever used."

## · COHESIVE · BURNISH · GOLD · CYLINDERS ·

---



Sizes,  $\frac{1}{8}$ , 1, 2, 3, and assorted.

Are similar to the above, but are *fully Cohesive*. They also have the quality of toughness, so the *plugger point carries the gold before it* instead of cutting through. It is claimed for them that they possess, in the highest degree so far known, the

## MAXIMUM OF COHESION WITH THE . . . MAXIMUM OF SOFTNESS AND TOUGHNESS

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• • • • •

It is believed these two varieties of Burnish Gold Cylinders possess such desirable and hitherto unobtained working properties, that they are well worth a trial by all first-class operators.

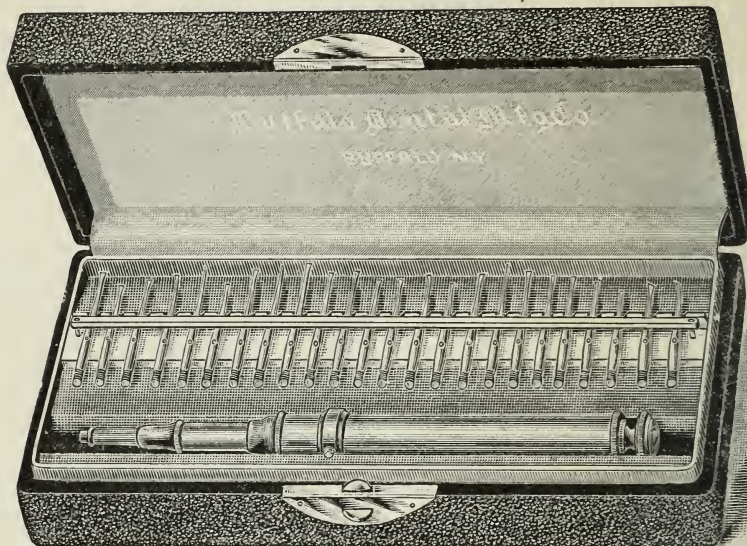
\$4.50 per  $\frac{1}{8}$  oz.—\$17.50 per  $\frac{1}{2}$  oz.

For Sale by  
B. D. M. CO.

R. S. WILLIAMS,  
No. 115 WEST 42d STREET,

NEW YORK  
CITY.

# MOROCCO CASE for the SNOW & LEWIS AUTOMATIC PLUGGER.



## NEW PATTERN OF POINT RACK.

FROM this date, January 1, 1888, the Hayes Rack will be discarded as an adjunct to the Morocco Case for the Snow & Lewis Automatic Plugger, and the Pin Rack will be substituted therefor. The Pin Rack was originally manufactured by The Buffalo Dental Manufacturing Company about twenty years ago. In its original form it was objectionable from the ease with which the points were dislodged from the pins. This difficulty is now obviated by the use of a retaining bar, which presses upon the points, rendering their accidental displacement impossible. As the bar is held down by light springs, it is easily raised when it is desired to remove a point from the rack, or to return one.

The new Morocco Case will be of the same dimensions as the former one, but will hold twenty-four points instead of eighteen.

## PRICES.

Snow & Lewis Automatic Plugger, Silver or Nickel Plated, with Morocco Case and 24 Plugger points, . . . . .	\$15.50
Morocco Case, with rack to hold 24 points, . . . . .	3.50

## STEAM GAUGES FOR VULCANIZERS.



We have a small, neatly made Steam Gauge, as well made and reliable as any steam gauge, having pressure and temperature both indicated upon the dial. The case is three inches diameter.

PRICE—Each, with coil pipe for connection, \$5.00.

BUFFALO DENTAL MFG. CO.

## Endless Vulcanizer Packing.

There has been some demand for an endless packing for the Whitney Vulcanizer; and we have at last succeeded in obtaining some, equal in quality and similar in structure to the packing strips commonly used.

There are rubber rings sold as endless packing, which are wholly unsuitable for the purpose. These can be relied upon as a good article. Price, 8 cents each.

# THE SNOW & LEWIS AUTOMATIC PLUGGER.

Patented October 24, 1865, October 30, November 20, 1866, June 23, 1868, and June 1, 1869.  
Patent of October 30th, 1866, re-issued August 22, 1876, February 2, 1880.

## THE MOST POPULAR AND EFFICIENT DENTAL INSTRUMENT EVER OFFERED TO THE PROFESSION.

This instrument, since its invention in 1865, has been improved from time to time, and has become one of the best known and most indispensable adjuncts to the dentist's operating case. It is now made after two patterns, the old and new style. The "old style" of instrument has

### TWO DISTINCT GRADES OF BLOWS,

one-eighth and one-quarter inch, regulated by means of the ring on the body of the instrument; the finer graduation of the strength of the blow being attained by turning the milled head at the end of the case.

The "new style" embodies an improvement, by which all lateral motion between the socket-piece and its bearings is prevented, and future wear between the parts provided for. This insures

### PERFECT STEADINESS OF THE POINT,

which can now be placed as desired with the same certainty as with a hand instrument. The new instrument has but the one-eighth inch length of blow, which can be varied in strength, as before, by the milled head at the end of the case. By means of the ring on the handle, either of

### THE PLUGGERS CAN BE LOCKED,

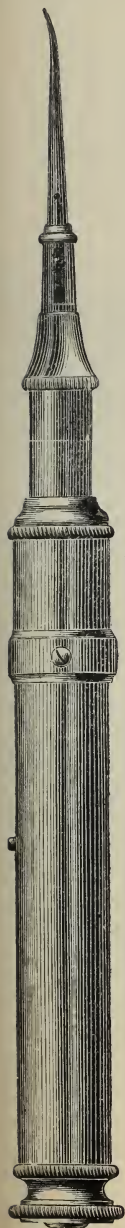
and used as a hand instrument. The above feature is not presented in any other Spring Plugger in the market.

The mechanical devices of the Plugger are protected by patents, embracing all points of any moment applicable to Automatic Pluggers, and we hardly need say that we shall strictly enforce all the rights secured to us therein.

### PRICES.

Automatic Plugger, triple Gilt, No. 1 or 2, . . . . .	\$12.00
Automatic Plugger, Silver or Nickel-plated, . . . . .	8.00
Points, per dozen, . . . . .	3.50
Varney's Points, per set of 13, . . . . .	7.00
Butler's Points, per set of 16, . . . . .	6.00
Enamel Chisels, per set, . . . . .	2.25
Morocco case, with Point Rack, . . . . .	3.50

Points of any desired pattern furnished to order.





# SIX WORLD'S FAIR MEDALS

—OF THE—

HIGHEST ORDER OF MERIT AWARDED FOR SUPERIORITY

—AT—

VIENNA, CHILI,  
PHILADELPHIA,  
PARIS, SYDNEY,  
AND  
MELBOURNE,

—TO—

**H. D. JUSTI,**

IN COMPETITION

WITH THE BEST MAKERS

—OF—

**PORCELAIN TEETH.**



BRANCH, 66 E. MADISON ST.  
CHICAGO, ILL.

1301 & 1303 Arch Street,  
PHILADELPHIA, PA.

**H. D. JUSTI.**



# REDUCED · PRICE · LIST.

TEETH.	In Lots of	In Lots of	In Lots of	In Lots of	Less than
	\$100.00	\$50.00	\$25.00	\$15.00	\$15.00
Justi Superior and Star Gum Sections...	12c.	12½c.	13c.	14c.	15c.
Justi Plain and New Celluloids .....	8c.	8½c.	9c.	9½c.	10c.

## GREAT REDUCTION IN GAS.

Surgeon Case, complete, with 7-gal. Bag.....	\$39.00.	With 4½-gal. Bag.....	\$	37.75
Universal Tripod, with 4½-gal. Gas Bag and 100-gal. Cylinder, filled.....				32.75
Universal Tripod, with 7-gal. Gas Bag and 100-gal. Cylinder, filled .....				34.00
Stand, all Japanned, N. P. Cap, 4½-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				34.75
Stand, all Japanned, N. P. Cap, 7-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				36.00
Stand, Japanned Base, N. P. Cap and Casing, 4½-gal. Gas Bag, 100-gal. Cylinder, filled, etc., ..				36.75
Stand, Japanned Base, N. P. Cap and Casing, 7-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				38.00
500-gallon Cylinder .....	\$22.00	100-gallon Cylinder .....		10.00
Refilling 500-gal. Cylinders.. .....			per gal.	.03½
Refilling 100-gal. Cylinders .....				<b>4.00</b>
Justi Inhaler, Nickel-plated .....	\$3.00	With Flexible Rubber Hood .....		8.50
4½-gallon Bag .....	2.25	7-gallon Bag.....		3.50
Metallic Connections for Gas Bags.....			per set	.50
Morocco Case, with Fittings complete.....				10.00
Union, Nickel-plated, with Connecting Tube,.....	\$1.00	N. P. Wrench.....		.50
Stop Cock, Nickel-plated.....	1.00	Wheel Key, Japanned .....		.25
Inhaling Tubing, Worsted Covering.....			per ft.	.50
<b>Justi New Universal Tripod, to hold Cylinders of all sizes .....</b>				<b>5.00</b>
<b>Justi New Universal Cyl. Stand, to hold Cyl. all sizes, N. P. \$9.00, Japanned..</b>				<b>7.00</b>
<b>Justi Flexible Rubber Hood.....</b>	<b>\$1.00</b>	<b>With Metal Connection.....</b>		<b>2.00</b>
Dr. Hurd's Union and Extension.....	5.00	With Chloroform Mixer.....		7.00

Dr. Hurd's Chloroform Mixer will be included with Outfits for an additional price of \$6.00.

Justi Extra Elastic Rubber, in ¼s, ½s and 1s.....	per lb.	2.75	
Justi Superior No. 1 Rubber, light, medium or black.....	"	2.25	
Doherty, Weighted Rubber, for lower sets .....	"	4.00	
Justi Acmé Cement .....	per ½ oz. .... \$1.50	Per oz. .... 2.50	
Justi Superior Insoluble Cement (four colors to the oz.) .....	per oz.	3.00	
Justi Superior Insoluble Cement (two colors to the 1-2 oz.).....	per ½ oz.	1.50	
Justi Star Gold Foil.....	per ½ oz. ....\$15.00	In ⅛ and ¼ ounces.....per oz.	32.00
Justi Star Tin Foil.....		per book	.40
<b>Justi Superior Gold and Platina Alloy .....</b>	<b>per oz. \$3.00; 2 oz. \$5.50; 4 oz. 10.00</b>		
Amalgams, King's, Caulk's, or Sterling .....		per oz.	3.00
Stopping or Pellets, Caulk's .....	\$2 00	Chicago Alloy.....	" 4.00
<b>Justi Magnifique Modeling Composition .....</b>		per box	<b>1.00</b>
<b>Justi Improved Hand Socket Holder.....</b>			<b>1.50</b>
Justi Improved Socket Handles for Excavators and Pluggers .....		per doz.	3.00
<b>Justi Socket Handles for Engine Points .....</b>		per doz.	<b>3.50</b>
Justi Socket Plier, Nickel-plated .....			.75
Justi Articulator, No. 0.....	\$0.90	No. 1, Light.....	\$1.75
		No. 2, Heavy.....	2.00
Justi Articulator, No. 3, Ball and Socket Joint .....			2.50
Justi Rubber Dam Weight, Nickel-plated.....			.50
Justi Star Rubber Dam Punch.....	\$1.50	Triplex Punch.....	1.00
<b>Universal Cuspador Clamp, adapted to all Dental Chairs.....</b>			<b>3.00</b>
<b>Justi Mouth Prop and Reflector, Silver-plated, Highly polished.....</b>			<b>2.00</b>
<b>Sand and Emery Paper Disks.....</b>		per box	.25
Rubber Dam Holder, Ivory Guards.....	\$1.50	Amber or Horn Guards .....	1.00
Superior Rubber Dam, per yard, thin .....	1.00	Medium.....	\$1.50
		Heavy.....	2.00
Cuspador, No. 1, with Gold Catcher .....	4.00	No. 2, with Gold Catcher and Cap.....	1.50
Cuspador, No. 3 .....	2.00	No. 4, with Gold Catcher .....	4.00
Nickel-plated Funnel.....	2.00	Glass Funnel for Cuspador .....	.75

H. D. JUSTI, 1301 & 1303 Arch St., PHILADELPHIA.

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• JUSTI • • • • •

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SUPERIOR

---

GOLD • AND • PLATINA

---

• • • • • ALLOY •

---



IN offering this Alloy to the profession, I can say that it will do all that is claimed for it. It has been largely used by first-class operators and experts who have **thoroughly tested** its **SUPERIOR QUALITIES**, and I have no hesitation in pronouncing it the **best combination of metals extant**, being carefully prepared after long tests and careful experiments; and the fineness of its grain, which makes it so **dense** after being mixed, is greatly due to the **crystallization** of the metals in the **process of its manufacture**.

Its main points are:—**SETS VERY QUICKLY** and can be **finished shortly** after its insertion; has good **EDGE**-strength, good **BRIGHT** color, and is **NON-SHRINKABLE**.

---

PRICE:—1 ounce, \$3.00; 2 ounces, \$5.50; 4 ounces, \$10.00

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• • • • • H. D. JUSTI, • • • • •

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BRANCH: 69 East Madison St., CHICAGO, ILL. 1301 & 1303 Arch St., PHILADELPHIA, PA.

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# Niagara Lathe Head and Stand

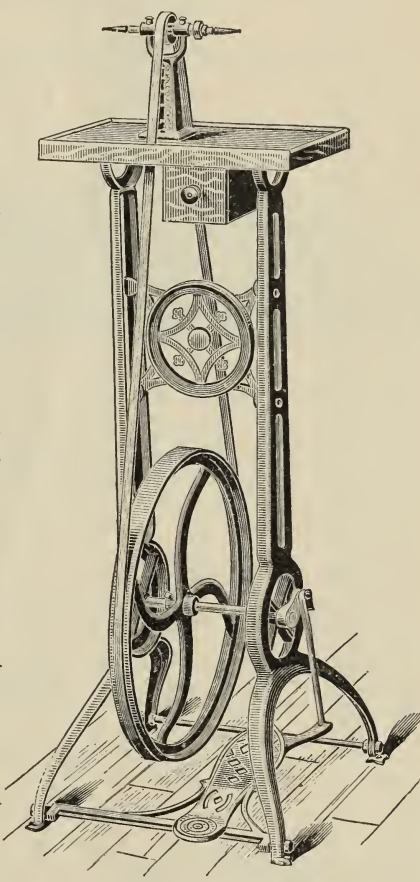
AS there is considerable demand for a dental lathe at a reasonable price, the B. D. M. Co. would call attention to the one illustrated as filling the requirement in every respect.

This lathe has been carefully designed throughout; and while it can be afforded at a less price than many others, it will be found on examination to be of good workmanship, of ample strength, and convenient in use.

The distribution of metal in the stand is such that it is both light and stiff. The head has a taper screw for brushes, a parting-nut for carrying a large wheel, and a split chuck, similar to the one employed on the B. D. M. Co.'s Standard Lathe Head, for carrying pin-chucks, on which corundum wheels can be mounted.

With this lathe can be furnished small corundum wheels, the size of stump-corundums for the dental engine, ready mounted on pin-chucks. These can be used as long as there is any corundum left on the chuck. In fitting teeth to the cast, the small tip of corundum which is left when the wheel is nearly worn out is very useful, enabling the operator to reach points of contact and make a fit which would be impossible with wheels of larger diameter. One size of these corundum wheels,  $\frac{7}{8}$  inch diameter, is now in stock.

The head is provided with a take-up, to close upon the spindle as it wears. Provision is also made for taking up end-motion. It will be seen that all the points necessary for a serviceable dental lathe are covered in the one here described, and the B. D. M. Co. offer it to the profession with the assurance that excellence of workmanship and design will commend it to the buyer as decidedly the best lathe yet produced for the money. This stand can be used with the B. D. M. Co.'s Standard Head.

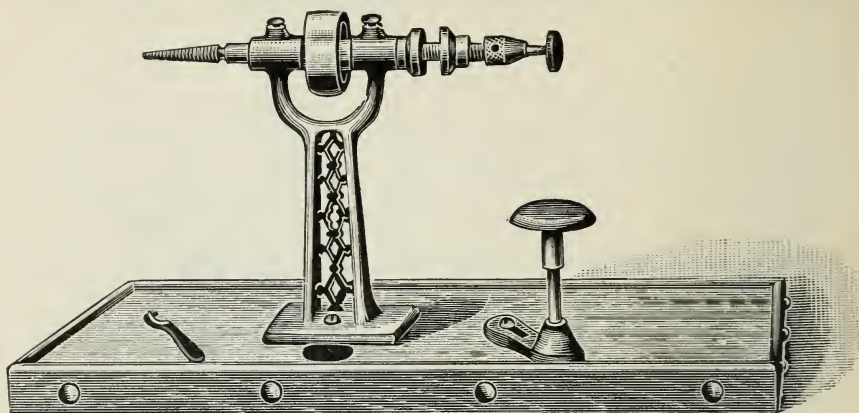


LATHE HEAD AND STAND - - - ONLY \$11.00

Stand only, . . . . .	\$8.00
Head only, . . . . .	3.00
Corundum Wheels, mounted on pin-chucks, each, . . . . .	.25



# NIAGARA · LATHE · HEAD.



THE above illustration represents the table and head of the Niagara Lathe, as sold only by us. It has a split chuck at the end of the spindle, which is operated by the small spanner seen on the table. It carries the ready-mounted corundum wheels, one of which, and a spanner, is furnished with each Lathe Head. The parting nuts will carry a large corundum wheel, and the left hand end of the spindle has a taper screw for brush wheels. The hand-rest is furnished without extra charge when the head and stand are sold complete.

## PRICE.

Niagara Lathe Head, . . . . . \$3.00

BUFFALO DENTAL MFG. CO.

## READY-MOUNTED CORUNDUM WHEELS.

### FOR LATHE HEADS.



These wheels are used with the Niagara Lathe, and the B. D. M. Co. Lathe Head. They are moulded upon a pin-chuck, and can be used as long as there is any corundum left. They are very useful for general work, and when partly worn, are excellent for articulating teeth, or for fitting them closely upon the gum. The facility with which some little depression is reached with one of these wheels when worn down to a very small diameter, is only appreciated by those who have used them. A single trial only is necessary to convince anyone of their value. One size,  $\frac{7}{8}$  inch diameter, is in stock at present.

A small split-chuck is also illustrated, by the use of which these wheels are adapted to the B. D. M. Co. Lathe Head. A trial of them is earnestly recommended to all using that lathe. The split-chuck goes into the socket in the end of the spindle, and reduces it so that the pin-chuck is firmly grasped.



## PRICES.

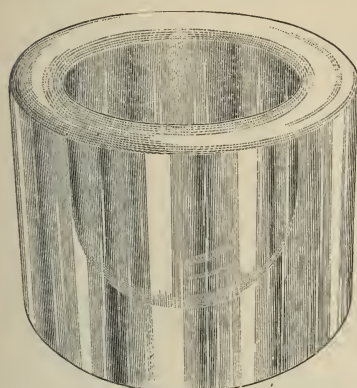
Ready-Mounted Corundum Wheels, each, . . . . . 25 cents.

Split-Chucks, for B. D. M. Co's Lathe Head, each, . . . . . 10 cents.



- - - FLETCHER'S - - -

# GLASS MORTAR AND PESTLE



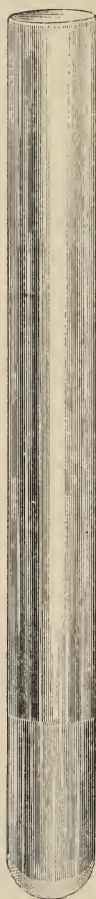
FULL SIZE.

FOR  
MIXING AMALGAMS.

These are the genuine FLETCHER MORTAR, made of glass, ground inside and on end of pestle. Size,  $1\frac{3}{4}$  inches outside diameter,  $1\frac{1}{2}$  inches high. Pestles for firm holding,  $4\frac{1}{2}$  inches long.

PRICE.

Fletcher's Mortar and Pestle, 50c.



## FLETCHER'S CARBOLIZED RESIN

IS HIGHLY RECOMMENDED AS A SUBSTITUTE FOR CREOSOTE IN NEARLY EVERY CASE; BEING MUCH MORE EASILY HANDLED, MORE EFFECTIVE AND LESS DISAGREEABLE TO THE PATIENT THAN CREOSOTE, AND LEAVES NO ODOR IN THE OPERATING ROOM.

On making the application, gently clear the cavity without excavating, dry it with spunk or absorbent cotton, and then apply carbolized resin on a small ball of cotton, sealing over with a very thin sheet of wax. The sealing is not absolutely necessary, as the CARBOLIZED RESIN IS ALMOST INSOLUBLE. In most, if not all cases of exposed nerve, a few applications will so entirely destroy the sensitiveness that the tooth may safely be filled without capping. It is an invariable specific for "tooth-ache," so-called.

In addition to its other valuable properties, Fletcher's Carbolized Resin will be found to be the **Most Reliable Styptic** in obstinate cases of bleeding. A plug of amadou or cotton, wet with Fletcher's Carbolized Resin and packed in the cavity, will stop bleeding instantly in cases where other remedies have failed.

If it becomes crystalline or too thick for use, add a few drops of chloroform.

PRICE, per bottle, . . . . . 25 cents.

## COPAL-ETHER VARNISH.

FLETCHER'S COPAL-ETHER VARNISH IS MUCH BETTER THAN SANDARAC VARNISH

FOR ALL PURPOSES WHERE A VARNISH IS REQUIRED.

PRICE, PER BOTTLE, . . . . . 25 CENTS.

FOR SALE BY ALL DEALERS IN DENTAL GOODS.

JAMES V. LEWIS, No. 15 COURT STREET, BUFFALO, N. Y.

# SAMSON RUBBER

MANUFACTURED BY

EUGENE DOHERTY,

Nos. 417 & 419 Kent Ave., Brooklyn, E. D., New-York.

WARRANTED TO BE

THE STRONGEST AND MOST UNIFORM RUBBER MANUFACTURED.

It is the TOUGHEST and Most Durable Rubber Made. Vulcanizes same as Ordinary Rubber.

SAMSON RUBBER.



TO DENTISTS,

IN LOTS OF

TEN POUNDS

AT ONE TIME,

10 PER CENT. OFF  
RETAIL PRICE.

MANUFACTURER OF ALL KINDS OF

## DENTAL RUBBERS AND GUTTA PERCHAS.

### PRICE LIST OF DENTAL RUBBERS AND GUTTA PERCHAS.

No. 1 Red Rubber, per lb., . . . . .	\$2.25	No. 1 Red Weighted Rubber, per lb., . . . . .	\$4.00
No. 2 Red Rubber, per lb., . . . . .	2.25	No. 2 Red Weighted Rubber, per lb., . . . . .	4.00
Samson Rubber, per lb., . . . . .	2.75	Black Weighted or Amalgamated	
Black Rubber, per lb., . . . . .	2.25	Rubber, per lb., . . . . .	4.00
Flexible or Palate Rubber, per lb., . . . . .	2.75	Weighted Gutta Percha, per lb., . . . . .	4.00
Gutta Percha for Base Plates, per lb., . . . . .	2.25	Adamantine Filling or Stopping, per	
Vulcanite Gutta Percha, per lb., . . . . .	3.50	oz., . . . . .	4.00

NOTE.—The above Rubbers and Gutta Perchas will be furnished in pound or half-pound packages to any Dentists in the country on receipt of price, and stating that they cannot get them at the Dental Depots in or near their place of business. Circulars giving full instructions how to use all of my Rubbers and Gutta Perchas, will be found in each box or package with the article ordered.

EUGENE DOHERTY, 417 & 419 Kent Ave., Brooklyn, E. D., New York.

[Oct86-1y]

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

# Pause, Read, and Act

---

THE truth of the old but trite adage, “The proof of the pudding is in the eating,” was never more fully exemplified than by using

## Gideon Sibley's Artificial Teeth,

and carefully noting results.

They need only to be seen to be admired for their beauty and surprisingly truthful imitation of Nature's Ivories, and their use confirms all that is claimed for them as regards superiority in all the essentials that, combined, make the most perfect teeth, both for the practitioner and the patron.

In manufacturing, only the best of materials and the most skillful workmen are utilized ; consequently the cost of production equals that of the highest priced teeth on the market.

## • • • Economy is Wealth • • •

Why pay two dollars for one dollar's worth of goods, quality being equal? Many dentists who are daily using SIBLEY'S TEETH practically answer this question.

### SAMPLE CARDS AND ABRIDGED PRICE LIST

**Sent Free of Charge.**

---

**D**ON'T TAKE OUR WORD FOR IT, but test these teeth, as others have done, alternating with best makes known to you, and keep a record of breakage, and you will be surprised at the result. . . . .

---

OBSERVE THIS TRADE



MARK ON GUM SECTIONS.

FOR SALE BY ALL FIRST-CLASS DEALERS.

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# GIDEON SIBLEY,

13th and Filbert Streets, PHILADELPHIA, Pa.

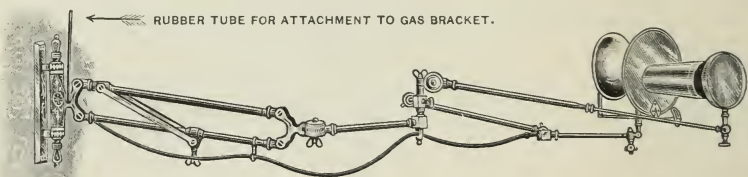
# THE LEWIS Combined Illuminating AND Magnifying APPARATUS.

PATENTED SEPTEMBER 27, 1887.

THIS apparatus is capable of being used for a number of purposes in dental operations: First. It is an adjustable support for a magnifying glass, relieving the dentist from the necessity of holding the glass to inspect his work, thus leaving both his hands free. Second. When not used for magnifying, the lens can be used to concentrate natural light upon the tooth to be operated on. Third. By the combined use of gaslight, reflector, shield, tube and lens, any dental operation can be carried on after the natural light has proved insufficient, or in the evening; in fact those who have used it, often prefer to darken their operating rooms and work entirely by the illuminator, pronouncing the light much superior to diffused daylight. Fourth. The tube and shield being removed, it affords a very convenient means for illumination during the evening for extraction.

The entire apparatus is suspended from the ceiling by means of a ball and socket joint—over the left arm of the chair and about its centre—which is so constructed that the ball is clamped sufficiently to retain the depending tube in any position. Sliding telescopically in the tube is a rod carrying arms which support the illuminating and magnifying devices, which are adjusted by the various joints and sliding tubes thereon, enabling the operator to direct the light to any part of the mouth.

When not in use the whole lower part is folded up, so that the arms are parallel with the depending tube, and the whole may be pushed up out of the way. This apparatus is of inestimable value during cloudy days. Being suspended from the ceiling, the apparatus is entirely out of the way of the dentist; there is not the tremor or unsteadiness which would be manifested if it were applied to the chair. The joints are so constructed that they are self-sustaining, retaining the apparatus in any position in which it may be placed. When ordering, state height of ceiling.



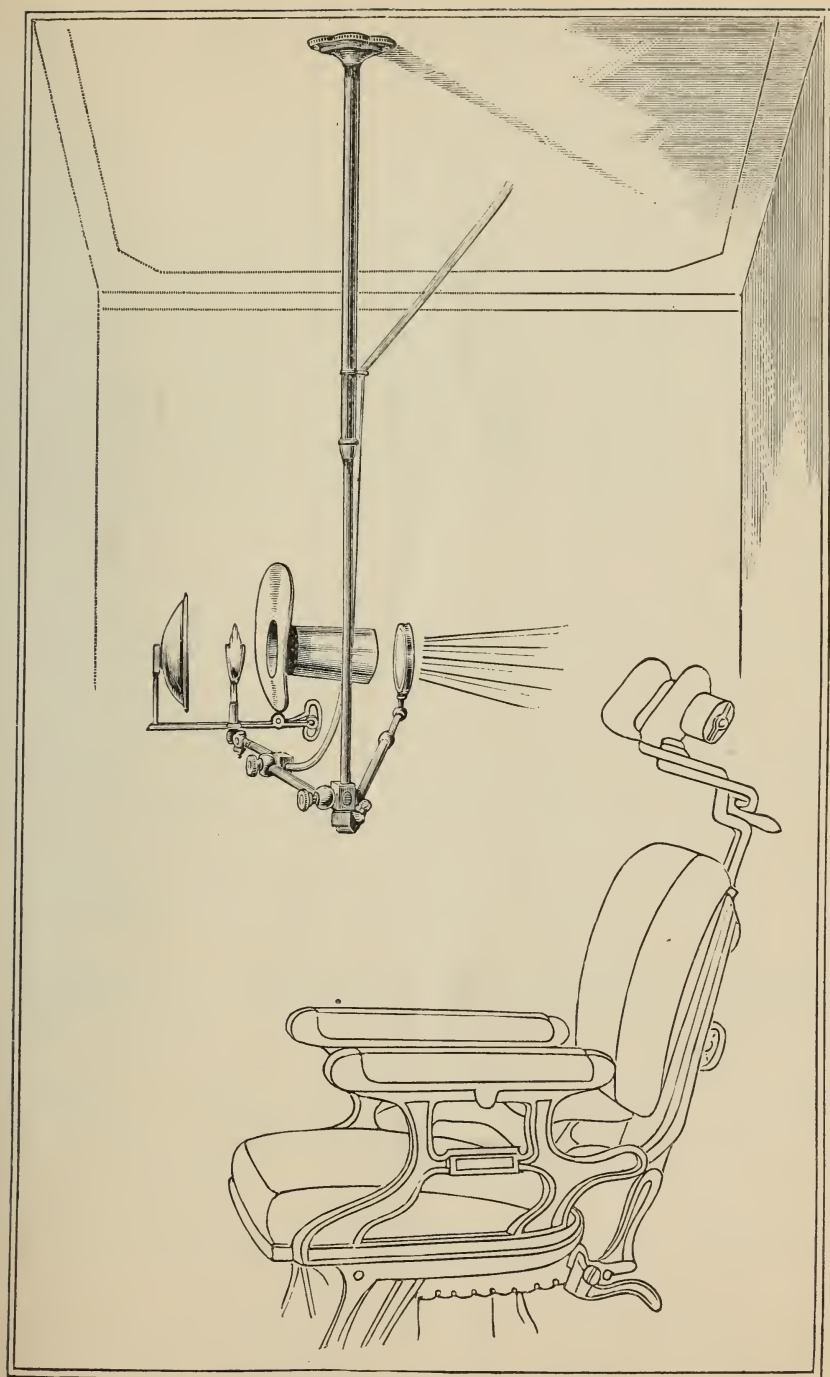
FOR ATTACHMENT TO SIDE WALL OF OPERATING ROOM.

Though the Lewis Illuminator is, in most instances, preferably attached to the ceiling, there are cases when it can be attached to the side wall with advantage. For this purpose the modification shown in the accompanying illustration has been devised. The wall support resembles the ordinary parallel motion dental bracket, swivelling to give lateral movement, while vertical adjustment is secured by the parallel bars. The diagonal brace and thumb-screw, which are plainly shown in the cut, hold it firmly at any desired height. Beyond the parallel bars, the arrangement of parts is precisely the same as with the ceiling pattern. The wall pattern of the illuminator can be used when the farther side of the chair is within two feet of the wall. Its proper position is about in line with the front of the chair-arms, the distance from the bottom of the wall-plate to the floor being about four feet. It is polished and nicked throughout.

## PRICES.

Lewis Illuminating and Magnifying Apparatus, Ceiling Attachment, . \$25.00  
Lewis Illuminating and Magnifying Apparatus, Side Wall Attachment, . 30.00





THE LEWIS ILLUMINATING AND MAGNIFYING APPARATUS.

# KING'S OCCIDENTAL AMALGAM.

PRICE REDUCED TO \$3.00 PER OZ.

This Amalgam has been before the profession in Ohio and Western Pennsylvania for some years, and all who have used or tested it agree that it has merits over any other Amalgam in the market.

The process of manufacture differs from that of other Amalgams, and

## BY A NEW INVENTION

Dr. King is enabled to obtain better results, both in regard to COLOR, SHRINKAGE, and EXPANSION, than is obtained in any other alloy in the market.

Test for color consists of sixty grains of Sulphuret of Potassa, dissolved in one ounce of water. Amalgam plugs to be left in this solution twenty-four hours or more. The Occidental will remain bright after this test, and we know of no other Amalgam, at even double the price, but that will discolor. All who would use the best should buy

## KING'S OCCIDENTAL AMALGAM.

---

### TESTIMONIALS.

I believe the Occidental Amalgam has *no equal* in the market to-day.

PITTSBURGH, September 22, 1881.

GALE FRENCH, D. D. S.

I think the Occidental Amalgam superior to any I have ever used.

PITTSBURGH, September 22, 1881.

J. G. TEMPLETON, D. D. S.

ASK YOUR DENTAL DEPOT FOR IT, OR SEND TO

**RANSOM & RANDOLPH, Wholesale Agents,  
83 JEFFERSON STREET, TOLEDO, OHIO.**

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

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Give us your Subscription now for 1888.

## OHIO JOURNAL OF DENTAL SCIENCE.

*A Monthly Journal of 48 to 56 pages, for Two Dollars per Year.*

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THE '88 VOLUME WILL BE FILLED WITH MATERIAL FROM THE PENS OF THE BEST MEN IN THE PROFESSION, COMPRISING ARTICLES BOTH PRACTICAL AND SCIENTIFIC. THE JANUARY NUMBER WILL CONTAIN AN EXCELLENT PORTRAIT OF THE VENERABLE EDITOR AND BIOGRAPHICAL SKETCH BY PROFESSOR J. TAFT.

Editor: GEO. WATT, M. D., D. D. S., Xenia, Ohio.

PUBLISHED BY

**RANSOM & RANDOLPH,  
TOLEDO, OHIO,**

ja88-1y]

Subscriptions received by BUFFALO DENTAL MANUFACTURING CO.

# CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.

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**GRAY.**

AND OTHER DENTAL PURPOSES.

**YELLOW.**

**LIQUID.**

EXCELLENT FOR LINING CAVITIES

**MEDIUM.**

MOUNTING ARTIFICIAL CROWNS.

**LIGHT.**

FOR FILLING TEETH,

FOUR COLORS and LIQUID.—Gray, Yellow, Medium and Light, . . \$2.00 per package.  
 TWO COLORS and LIQUID.—Gray and Yellow, . . . . . 1.50 “ “  
 ONE COLOR and LIQUID.—Gray, Yellow, Medium, Light or Gum, 1.00 “ “

**THIS COMPOUND STANDS WITHOUT A RIVAL.** Used for TEN years by Leading Dentists throughout the world.

**DIAMOND CEMENT** should not be classed with the so-called oxy-phosphates, as is often the case—the materials of which it is composed and its process of manufacture being entirely different—hence its **Superiority**.

**IT HARDENS IN WATER OR SALIVA.**—Two or more colors blended together (in mixing) will produce any shade desired.

## • • CAULK'S • PAR • EXCELLENCE • ALLOY • •

This Gold and Platina Alloy is manufactured on a new principle. Saves teeth where others fail.

It is the result of a long series of experiments, and has been in constant use for TEN years. By our NEW METHOD of manufacture there is no GUESS WORK, the molecular change is controlled, making each and every ingot always and absolutely alike in its properties.

**PRICE**, in 1-3, 1-2 and 1 oz. packages, per oz., \$3.00; 2 oz., \$5.00.

## • • CAULK'S • WHITE • ALLOY • •

Has been greatly improved. There is nothing equal or superior to it. Is of a peculiar grayish-white color. When properly manipulated with our Purified Mercury it will retain its color under all circumstances.

**PRICE**, in 1-4, 1-2 and 1 oz. packages, per oz., \$4.00; 2 oz., \$7.00.

## CAULK'S • DIAMOND • POINT • STOPPING • and • GUTTA-PERCHA • • POINTS • FOR • FILLING • ROOTS • •

**PRICE**, in 1-8, 1-4, 1-2 and 1 oz. packages, per oz., (reduced to) \$2.00.

All of Caulk's Filling Materials are sold by Troy Weight and sent by Mail.

**OVER FIFTEEN THOUSAND** Dentists are using these materials throughout the world. What better evidence do you wish of their Superiority and Excellence.

**Orders for DENTAL SUPPLIES** will receive prompt attention.

**L. D. CAULK**, Manufacturer,

Office and Salesroom, 1305 and 1307 Arch Street, - - **PHILADELPHIA, PA.**

Laboratory, CAMDEN, DEL.

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

• ENDLESS •  
**VULCANIZER PACKING.**

There has been some demand for an endless packing for the Whitney Vulcanizer, and we have at last succeeded in obtaining some, equal in quality and similar in structure to the packing strips commonly used. There are rubber rings sold as endless packing, which are wholly unsuitable for the purpose. These can be relied upon as a good article.

PRICE, . . . 8 CTS. EACH.

**AKRON  
 DENTAL RUBBER.**

The material of which this Rubber is composed is prepared by a new process, which insures

**ABSOLUTE PURITY,**

RESULTING IN A PRODUCT OF  
 WONDERFUL

**DENSITY, FINENESS AND STRENGTH.**

It is especially designed to meet the requirements of those who seek to produce the most perfect and artistic work. It is exceedingly tough and light, and takes a beautiful polish. Plates may be made very thin without splitting or crumbling away about the edges. It can be used with the best results for making

**PARTIAL LOWER DENTURES,**

an advantage which no other rubber possesses. It has the unqualified approbation and endorsement of the profession everywhere, and never fails to give satisfaction.

PRICE, \$3.00 PER POUND.

For Sale by **BUFFALO DENTAL MFG. CO.**

**MERCURY . . .**  
**Re-Distilled.**



The purer the Mercury used in preparing amalgam, the greater the assurance of a successful operation.

• The B. D. M. CO'S •  
 Re-Distilled • Mercury

IS AS PURE AS CAN BE  
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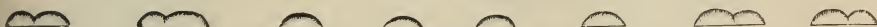
RIGHT.

UPPER.

LEFT.



1 \$3.50. 2 \$3.50. 3 \$2.50. 4 \$2.00. 5 \$2.00. 6 \$2.00. 7 \$3.50. 8 \$3.50.



THICKNESS OF THE GOLD CUSPS.



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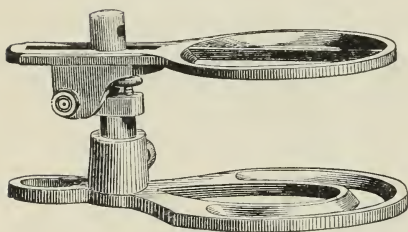
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# · DENTAL · ARTICULATORS ·

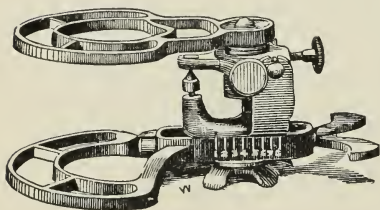


## NO. 4. THE SNOW & LEWIS ARTICULATOR.

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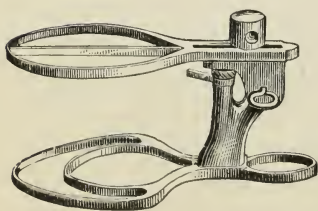


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## NO. 6. B. D. M. CO.'S COMMON ARTICULATOR.

The Buffalo Dental Manufacturing Co. offer the articulator illustrated to dentists desiring a cheap article, in the belief that it possesses some advantages over other patterns of the same price. The adjusting screw is fastened by a jam-nut which renders it secure against any alteration by handling.

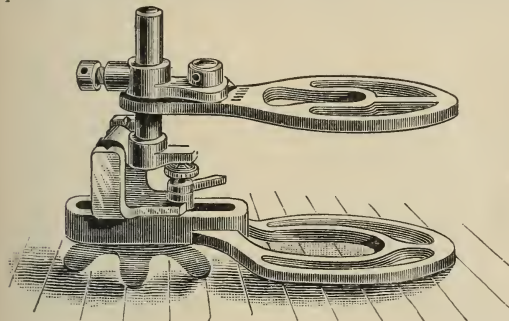
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Designed by Dr. Theodore G. Lewis. In the construction of this articulator, the desirable points in several articulators have been combined with new devices, to produce a practical implement in every particular.

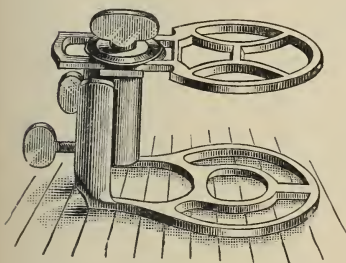


Every motion is independent. The means for correcting false positions in the bite are complete in every respect, while the range to accommodate different thicknesses of casts is ample. Substantially the same articulator has been in constant use by the designer for several years, and it has been found to be as near perfection as possible.

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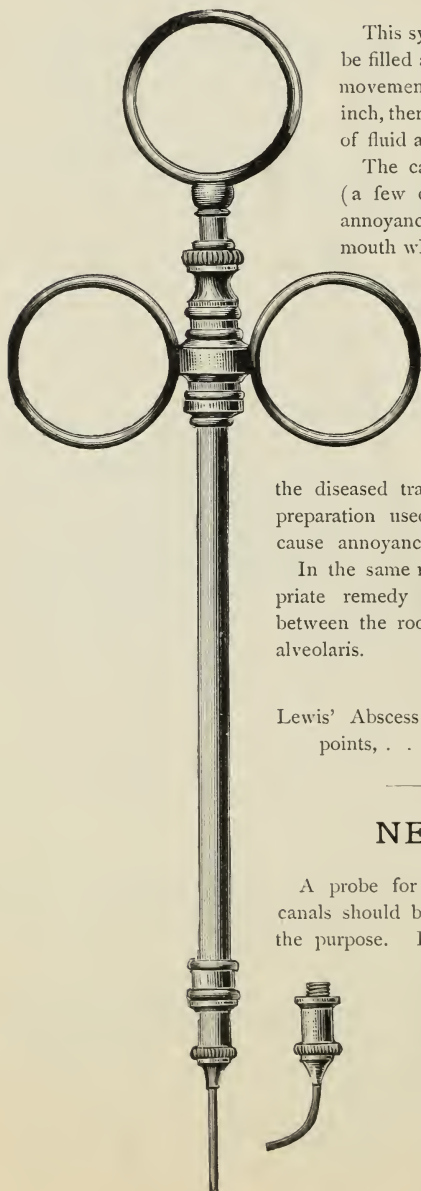
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In the same manner a few drops of the appropriate remedy may be placed in the pocket between the root and gum in a case of pyorrhœa alveolaris.

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Lewis' Abscess Syringe, with two gold points, . . . . . \$3.50

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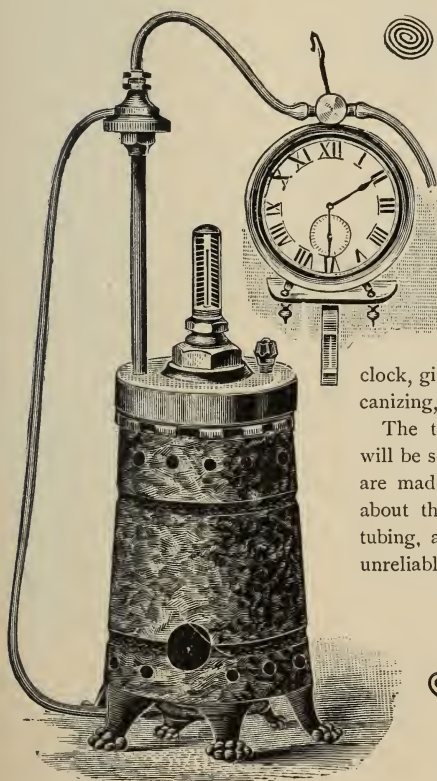
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[Patented October 31, 1871.]

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IT RELIEVES THE DENTIST ENTIRELY FROM THE  
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Being operated by steam pressure, it is more sensitive and accurate in its operation than the thermometer, which is operated by the conduction of heat through the body of the vulcanizer. As a consequence, it secures *superior and uniform results in vulcanizing.*

It will pay for itself many times over in the freedom from care, in the immunity from dangerous explosions, and in the time it gives the operator for the performance of other duties.

The cut-off valve is operated by the clock, giving complete control of the time of vulcanizing, as well as the temperature.

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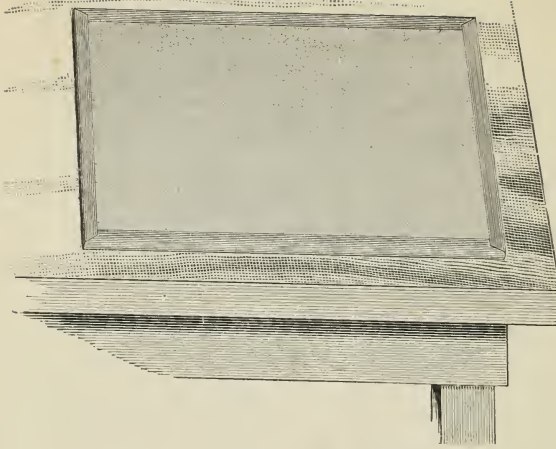
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Coolidge Gas and Time Regulator, with 3 ft. rubber tubing, .	\$10.00
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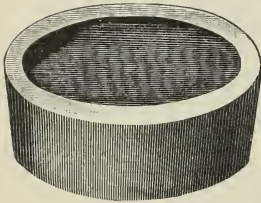


Suggested by Dr. H. H. Boswell. For protecting the table while soldering.

These are made from Asbestos board, about one-fourth of an inch thick, and edged with iron. They are incombustible, and excellent non-conductors of heat. The advantages to be derived by their use during blow-pipe work are too obvious to need further explanation.

### PRICES.

No. 1, Asbestos Pad,	6½ in. x 10 in. x ¼ in. thick,	each	\$0.50
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## MOULDED CARBON BLOCKS.

For supporting work under the blow-pipe. Cleanly, and perfect non-conductors. These are circular, hollow on each face, and four inches diameter.

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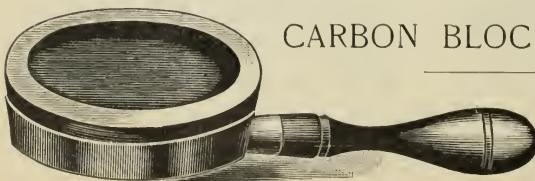
Moulded Carbon Blocks, . . . . . each 25 cents.

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For blow-pipe analysis, made of the same composition as the Carbon Blocks. More cleanly than charcoal; the cupped ends being admirably adapted for soldering small articles, such as gold crowns. Size, 1 ⅝ x 3 inches.

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## CARBON BLOCK HOLDER.

A very convenient device for holding Carbon Soldering blocks.

PRICES—Carbon Block Holder, . 25 cts. Carbon Block and Holder, . 50 cts.



# THE DENTAL ADVERTISER.

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VOL. XIX.—BUFFALO, N. Y., JULY, 1888.—No. 3.

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## A CASE OF LARYNGEAL SPASM UNDER NITROUS OXIDE.

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BY FREDERIC HEWITT, M. A., M. D., CANTAB.

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Instructor in, and Lecturer on, Anæsthetics, at the London Hospital; Administrator of Anæsthetics at Charing Cross Hospital, and the Dental Hospital of London.

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The following case came under my observation at the close of last year. I have thought fit to publish it for two reasons. In the first place, I am convinced that there is no better mode of extending our knowledge respecting the action of anæsthetics, than by carefully observing and recording all peculiar and instructive cases; and, in the second place, I venture to hope that, by making known the following details, fresh light may, in the course of time, be thrown upon those features of the case which are at present involved in some obscurity.

On December 1, 1887, at 5 P. M., I was called to administer nitrous oxide for a well known dental surgeon in my neighborhood. The patient was a gentleman, thirty-five years of age, who, at first sight, presented no obvious peculiarities in his appearance. He was of middle stature, well nourished, and of rather florid complexion. Subsequently, on careful examination, it was discovered that, with the exception of very slight rotary and nutatory movements, the head was so rigidly fixed that when the patient wished to look to the right or left he invariably moved his body in the required direction. Most of the muscles of the neck and throat, especially those situated posteriorly, were found to be abnormally rigid, whilst in addition to the stiffness of movement which existed in the cervical region, the jaws could only be separated to about one-fourth of their normal extent.

Since the date above referred to, the patient has very kindly furnished me with full particulars of his previous health, and the following is a brief abstract of his statements. He had rheumatic fever, followed by several subacute rheumatic attacks, in 1871. Was weak and ill during 1872. Was dangerously ill with "some kind of enteric fever," in Italy, in 1873. He grew stronger in 1874, and continued to improve. In 1882 he had typhoid fever in England. In 1883 he was very ill and weak "with low fever coming on every now and then." After this he grew gradually stronger, and with the exception of stiffness in most joints, not only of the extremities but also of the trunk, he regained good general health. The stiffness in the neck muscles and inability to open the mouth beyond a certain degree, were first observed in or about the year 1874. Even when he is in his usual health he can produce audible crackling in many of his joints, especially in those of the lower jaw, cervical vertebræ and wrists.

The administration of nitrous oxide on the occasion referred to, was conducted in the usual manner. The operator, who was about to remove the left first upper molar tooth, placed a small gag between the teeth on the right side. I applied the face-piece, and first allowed the patient to breathe air through the apparatus. Nitrous oxide was then admitted, and each expiration was allowed to escape.\* The phenomena which usually attend the inhalation now presented themselves, and the face-piece was removed when the characteristic alteration in the respiratory rhythm commenced to appear. The tooth was then without difficulty extracted, and was found to be intact. The admission of air when the face-piece was removed did not, as is usually the case, restore the respiratory rhythm. I may here mention that it is my practice to remove the face-piece and to terminate the administration when the rhythm of breathing *commences* to become impaired. The admission of air during the peculiar intermittent respiration at the end of an administration is usually sufficient to restore the normal breathing in a few seconds. But on this occasion, the respiration, after the removal of the face-piece, became more and more difficult and finally ceased, as though from some *obstructive* condition of the air passages. The reason why I emphasize the word obstructive will be subsequently seen. The sound made by the last attempts at respiration was, to a certain extent, suggestive of fluid at the back of the throat. My first act, therefore, was to attempt to turn the head upon its side, and to push forward the lower jaw, a procedure which in ordinary cases is almost invariably successful in re-establishing breathing, when a little blood or

\*Although I have previously pointed out in these pages that there are some advantages in allowing a patient to re-breathe nitrous oxide for a few respirations, just towards the close of the administration, I now rarely adopt this plan in consequence of the difficulty of thoroughly cleansing the bag after each case.

mucus has accumulated at the back of the pharynx. The patient, however, was in a state of extreme tonic spasm, which more particularly involved the previously rigid muscles of the throat and neck. From this cause, and from the rigidity of the cervical spine, it was impossible to rotate the head except to a slight extent. Moreover, seeing that there was a considerable degree of fixation of the lower jaw it was found impossible to push the latter bone forwards. I next attempted to pass my fingers to the back of the mouth, but I was unable to do so, as the aperture between the front teeth was so small. I therefore applied the tongue forceps, and made vigorous traction, but without any good effect. As a small quantity of blood from the socket of the extracted tooth had now escaped into the mouth, and as the rigidity of the patient prevented my bending his head forwards, I decided to attempt to invert him and at the same time to forcibly compress the thoracic walls. With the able assistance of my colleague this was done; but the manœuvre proved unsuccessful. The thoracic walls were absolutely immovable. I next placed the patient on the floor, and very forcibly pressed upon the sternum whilst I applied the tongue forceps as before. Respiration had now ceased (according to my estimate) for two to two-and-a-half minutes. It will be observed that I never attempted artificial respiration (in the usual acceptation of the term), for I was sure that the unyielding rigidity of the thoracic walls, which rendered futile all our endeavors to compress them, would have rendered any more formal efforts equally nugatory. The face was livid and bloated, the lips purple, the whole body rigid, the chest motionless and fixed. There was no time, nor was it necessary, to feel the pulse. I was perfectly confident that the failure of respiration was such that, if I could successfully perform laryngotomy, recovery would almost certainly follow. I therefore asked my colleague to get the tracheotomy instruments, which I always carry, from my bag. In order to save time—for death was imminent, and every moment precious—I employed his pocket-knife, so that whilst I was performing the operation he might be preparing the tube. I made a skin incision, and then rapidly passed the small blade of the pocket-knife into the crico-thyroid membrane. In my eagerness to gain admission to the trachea I cut either partly or wholly through the cricoid cartilage. The parts were much obscured by dark venous blood. Passing the tip of my little finger into the opening thus made, the rushing sound of entering air immediately became audible, and the tube was without difficulty introduced. I next sent for Mr. Shield, who subsequently took charge of the case. When consciousness had returned, the patient expressed a wish to see Sir James Paget, under whose care he had formerly been; and it was not long before this wish was gratified, for Sir James was kind enough to come without delay. All superadded spasm had now completely subsided,

and the patient was able to speak without difficulty. Bearing in mind the unexpected and pronounced nature of the spasmodic seizure, it was decided, after a brief consultation, to allow the tube to remain in position till next day, when it was removed by Mr. Shield. My colleague, whose able assistance and uniform kindness I shall ever appreciate, allowed a bed to be arranged in the room in which the operation had been performed, and an equable temperature was carefully maintained throughout the night. The wound completely healed in a week's time, and the patient made an excellent and uninterrupted recovery.

In carefully considering the facts of the above case, three questions present themselves: 1. What was the nature and exact situation of the obstruction to respiration? 2. What was the cause of the spasmodic condition? 3. Could any other means short of laryngotomy have been successfully adopted for the relief of the symptoms?

1. *The nature and situation of the obstruction.*—When the administration of nitrous oxide is pushed to its full extent, air being rigidly excluded, a peculiar alteration in the rhythm and amplitude of the respiratory movements almost invariably ensues. I have elsewhere\* pointed out that the intermittent and somewhat tumultuous respiration produced by a full dose of nitrous oxide is partly, if not wholly, dependent upon the spasmodic action of certain extrinsic muscles of the larynx. Towards the close of an administration of the gas, it will be found that the larynx becomes, at irregular and short intervals, drawn up, as in the act of deglutition. Every time the larynx is thus raised its superior aperture becomes closed, partly by the epiglottis, and partly also by the action of the sphincter muscles. The alteration in respiratory rhythm is thus rendered intelligible; for, at the moment at which the larynx is raised, and its superior aperture closed, respiration becomes temporarily checked and its rhythm therefore altered. Even though nitrous oxide be pushed to an undesirable degree, the removal of the face-piece and the admission of air will, with the rarest exceptions, suffice to restore breathing. I have introduced these remarks because they may possibly tend to throw some light upon the question now under discussion. I am not prepared to state that in the above case the obstruction was wholly occasioned in the manner just described. The occlusion may have exclusively arisen from spasm of the sphincter muscles, and the spasmodic elevation of the larynx may have played an unimportant part in the causation of the obstruction. But, whatever was the determining cause of the obstruction two facts became apparent: firstly, that the occlusion of the air passages was of a spasmodic nature, the spasm having involved either the sphincter muscles of the larynx or the elevators of the larynx, or both; and



secondly, that the supra-glottic portion of the larynx was the seat of the obstruction to respiration. There is every reason to believe that the vocal cords themselves took no active part in causing the obstruction; for there was no stridor such as that which is met with in laryngismus stridulus, or spasm of the true cords.

Taking all circumstances into consideration, it is not unreasonable to suppose that the primary difficulty in respiration was identical with that which usually manifests itself in a minor degree at the conclusion of an administration of nitrous oxide—a difficulty dependent upon the intermittent elevation of the larynx. Going one step further, we naturally inquire: Why did this intermittent obstruction terminate in complete occlusion of the air passages? Either the larynx must have been prevented from descending by reason of some abnormal condition in its extrinsic muscles; or the sphincter muscles of the larynx must have become affected with the most obstinate form of spasm. Whether one or both of these conditions existed, it is, so far as I know, impossible to say. Moreover, we must not lose sight of the possibility of two minor conditions having contributed to the obstruction. A certain amount of venous engorgement occurs under nitrous oxide, a fact which, in a full-blooded patient, might account for a limited degree of narrowing of the superior aperture of the larynx; and, if we admit that the elevation of the larynx and the application of its superior aperture to the epiglottis was an important element in the case, it is obvious that any attempts on the part of the thoracic and abdominal muscles to overcome the obstruction would have had a deleterious effect, in consequence of the suction action upon the epiglottis which would thereby have resulted.

2. *The cause of the spasmodic condition above described.*—It is unfortunately impossible in the present state of our knowledge concerning nitrous oxide, to say what causes operate in the production of the tonic and clonic phenomena with which all who have administered the gas must be acquainted. It is not my intention to discuss, on the present occasion, the physiological significance of these phenomena. Whatever may be the cause of the spasmodic movements which, at the termination of an administration of nitrous oxide, are prone to affect many of the muscles which are directly or indirectly concerned in the maintenance of respiration, I cannot avoid the belief that, in the above case, other, and perhaps more important, factors must have been at work. There would seem to be reasonable grounds for the hypothesis that a patient whose throat and neck muscles had undergone certain changes by reason of the restricted movements in the articulations of the jaws and vertebræ might be peculiarly affected by the ordinary dose of nitrous oxide. A certain degree of hypertrophy was probably present in some muscles, whilst in others the opposite nutritive condition doubtless existed. It is a

noteworthy fact that the spasm which produced the stoppage of respiration, was of a most pronounced character. Granted that the initial or predisposing cause of the seizure was the presence of nitrous oxide in the circulation, I cannot but think that some other more potent cause subsequently came into operation. In the absence of more tangible reasons, I am therefore inclined to regard the intense spasm which rapidly supervened as connected in some way or another with the abnormal arrangement or condition of the muscles of the throat and neck already referred to.

3. *The treatment adopted.*—The usual methods of restoring respiration were, as I have described, fully tried. One of the most remarkable features of the case was the extreme rigidity of all the muscles of the neck and chest, so that all attempts to push the lower jaw forwards or to compress the thorax were unsuccessful. It may not be out of place, in this connection, to point out the great difference between failure of respiration from some obstruction in the air passages and failure from paralytic causes. In the latter condition, when uncomplicated, artificial respiration will, in a few moments, restore respiration, because air may be readily forced into and out of the chest. In the former condition it is obviously useless to attempt to systematically perform artificial respiration, but the attention should be directed towards the removal of the obstruction. Traction upon the tongue, which is usually successful in restoring breathing which has ceased in consequence of obstruction at the superior aperture, was vigorously tried, but without good effect. Had it been practicable to have opened the mouth widely, it is possible that the obstruction might have been overcome by hooking forward the epiglottis and separating the approximated sides of the superior aperture of the larynx with the finger; but such a procedure was unfortunately out of the question by reason of the partial ankylosis of the lower jaw. Artificial respiration, in the usual sense of the term, was, for obvious reasons, useless; and forcible compression of the chest completely failed to drive anything past the obstruction. Laryngotomy was, therefore, the only remedy left, and, as I have already described, this measure was completely successful.

It is extremely rare for any emergency to arise under nitrous oxide, and a prolonged acquaintance with the anæsthetic has proved that, in experienced hands, the danger to life incurred by its administration is so infinitesimal that it may be disregarded. Still, as the above case has shown, we must be ever on the alert and ready to cope with any difficulties that may arise. Had the patient not been the subject of the peculiar condition of the neck and throat above described, it is in the highest degree probable that no serious effects would have been produced by nitrous oxide. Were I to be asked, on some future occasion, to anæsthetise a similar patient, I should either prefer to induce very slight

anæsthesia with nitrous oxide, and then proceed to administer ether vapor till the required degree of narcosis had become established, or I should administer ether alone. So far as I can ascertain, no similar case has hitherto occurred; and I therefore trust that the above details may help to add to our knowledge respecting an anæsthetic whose advantages are so universally appreciated.—*Journal of the British Dental Association.*

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## IS THERE NEED OF AN INTERNATIONAL DENTAL CONGRESS?

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The *Dental Review* of March, 1888, thinks there is, and says "the time has arrived when decisive steps should be taken with a view of convening an International Dental Congress." We are sorry to differ with our worthy contemporary in his views upon this subject, for we fail to see either the need or the great value to be derived from such a gathering since the organization of the Dental and Oral Section in the International Medical Congress.

The success which attended this section in the London and Washington meetings of the Congress, has secured for this department of medicine and surgery a permanent position in the Congress. Each section is a congress of itself to all intents and purposes in that particular department, and every advantage to be gained by an International Dental Congress can be much better attained by the section in the International Medical Congress. We think American dentists fail to appreciate the feelings of their foreign brethren in this matter.

The profession abroad has been struggling for years to obtain recognition as medical men, hence anything which looks like withdrawing from the contest and organizing as a separate profession, does not meet with the approval of the better class of practitioners, and this is especially true of England and Germany.

We have recently seen a letter from one of the most prominent English practitioners of London, in which he says: Very few, *if any*, of the brethren of England want a Dental Congress; they prefer the section in the Medical Congress, as its connections and aims are more in accord with their views, and will do vastly more to establish the position of dentistry in Europe, than would a Dental Congress.

In our humble opinion the time is passed for the organization of any such movement as that suggested by the *Review*; it savors too much of a bygone time. This is an age of progress, and in view of all the facts it would seem like going backwards to cut ourselves loose from the medical profession, just when dentistry has attained the standing and recognition for which it has been striving so many years.—*Archives of Dentistry.*

## ANTISEPTICS AND GERMICIDES.

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BY P. J. KESTER, D. D. S., CHICAGO, ILL.

That fermentation is due to the presence of low forms of vegetable life has long been known, and that the putrefactive and suppurative processes are analogous to fermentation is being accepted by nearly all pathologists.

That pyæmia, septicæmia and pus formations are due to the presence of micro-organisms either primarily or by the alkaloids of their waste products, seems to have been proven by actual experiment, and the researches of our most prominent dental pathologists have demonstrated to their own satisfaction, that nearly all of the diseases that the dentist is called upon to combat, are due to the presence of bacteria.

Caries of the teeth, the most prevalent of all affections, is due to this cause.

Phagadenic Pericementitis (pyorrhœa alveolaris) is without doubt a product of a specific organism, suppuration. The formation of abscess, seems to have been proven to be but the manifestation of the presence of some variety of the staphylococci. Assuming then for the purposes of this paper that the microbe is the necessary and constantly present element in the production of disease, and particularly in all septic conditions, some general facts may be considered :

I. That they are not normally present, but are conveyed to fluids or tissues from without. (Such treatment as would exclude them would be the aseptic.)

II. Being alive, the conditions must be such as will enable them to perform their various physiological functions of alimentation, respiration, excretion, reproduction, etc.

III. Any chemical substance which has the potency to prevent the development of bacteria of any kind, would be a true antiseptic—and

IV. Such agents as destroy the micro-organism are germicides.

Antiseptics may be divided into two classes :

I. Those agents which exert an inhibitory power on the microbe itself—these act by interfering with the vital energy or by so depressing the organism, that it can not perform its usual functions—*e. g.*, heat and cold, alcohol, salt, borax, hydronaphthol, etc.

II. Substances which render the conditions unfavorable to the growth of the micro-organism by so changing the medium as to rob it of its food, as by the precipitation of albuminous matters from organic infusions. Example, sulphate of iron, sulphate of zinc,  $Zn\ Cl_2$ , and such other agents which, by increasing the density of the liquid to such an extent that it is impossible for the organism to exist ; sugar, salt, sulphate mg., etc., are



some of the substances which owe their usefulness as antiseptics to this property.

All germicides are antiseptics *per se*, but all antiseptics are not germicides, many substances are powerfully antiseptic but have no germicidal power, *e. g.*, iodoform, hydronaphthol; the latter, according to the experiments of Dr. Fowler, of Brooklyn, had the power of arresting the development of the germs of fermentation in urine 1-6000 for months at a time, but by transferring them to normal urine they were developed with their usual rapidity. It is not the purpose of the essayist to introduce the whole list of antiseptics and germicides, nor the usual methods of practice, but it may be of interest to notice briefly some of the more important ones.

Heat and cold have already been alluded to as antiseptic agents, but the nature of our work precludes the possibility of making use of them in practice, as investigators have shown that the change in the temperature necessary to prevent the development of, and to destroy the life of the microbe and its spores is very great. Koch and Wolfhügel, found that a temperature of 100 C. (212 F.) maintained for an hour and a half would destroy bacteria without spores, but to destroy the latter the temperature must be increased from 230 F. to 284 F. and continued for from one hour and a half to three hours, so that the claim made that heat is one of the best antiseptics, can not be made use of in dentistry. The perfect drying of a root by warmed air will not destroy germs or spores.

The following is a partial list of antiseptics and germicides taken from Dr. Sternberg's article in the Reference Hand Book of Medical Sciences:

Eminently antiseptic . . .	{	Mercuric Iodide . . . . .	1-40000
		Silver Iodide . . . . .	1-33000
		H <sub>2</sub> O <sub>2</sub> . . . . .	1-20000
		Mercuric Chloride . . . . .	1-14300
		Silver Nitrate . . . . .	1-12500
Very strongly antiseptic .	{	Chromic Acid . . . . .	1-5000
		Chlorine Gas . . . . .	1-4000
		Oil of Mustard . . . . .	1-3353
		Salicylic Acid . . . . .	1-1000
Strongly antiseptic . . .	{	Zinc. Chloride . . . . .	1-526
		Mineral Acids . . . . .	1-500
		Carbolic Acid . . . . .	1-333
		Creosote . . . . .	1-200
Feebly antiseptic . . . .	{	Arsenious Acid . . . . .	1-182
		Boracic Acid . . . . .	1-143
		Ferrous Sulphate . . . . .	1-90
		Sodium Borate . . . . .	1-14
		Alcohol . . . . .	1-10
		Sodium Chloride . . . . .	1-6

The proportions given in the table are the ones in which they are antiseptic, *i. e.*, they will prevent the development of germs, but a much

higher per cent. is necessary to destroy them. Mercuric chloride, for instance, is antiseptic in 1-14300, but Koch found that a 1-1000 solution was required to destroy all bacteria with their spores. Hydrogen peroxide, which has an antiseptic power in 1-20000, fails as a germicide in much less than 1-125. It is not enough to know that a substance is a germicide, but it is necessary to know the exact amount required—xx gtt. of carbolic acid to a quart of water is not strong enough, notwithstanding an M. D., a professor in one of our numerous medical colleges, says "that that is about the proper mixture for an antiseptic wash."

Standing very nearly at the head of the list of antiseptics is mercuric chloride which seems to possess many qualities which would recommend it to the dentist; it is cheap, non-irritating, odorless, soluble in water, and according to Koch, destroys all microbes and spores in solutions of 1-1000, and yet it has not proven as efficient in the hands of the dentist as might have been expected. This may be explained by the knowledge of the fact that when sublimate solution is brought into contact with albuminous fluids, an insoluble albuminate of mercury results (Laplace), which is entirely free from antiseptic properties. When it is remembered that albumen is found in the mouth and roots of teeth in sufficient quantities to precipitate the Hg., we can readily see that our results would be negative.

Dr. E. Laplace found that by the addition of an acid to the solution this precipitation would not occur.

The acid which he found the most satisfactory was tartaric, in the following proportions:

R.	Mercuric chloride . . . .	1.
	Tartaric acid . . . . .	5.
	Aqua dist. . . . .	1000.

This preparation he found destroyed the feter in suppurating wounds in a very short time, and these were his conclusions:

I. Acid solutions of mercuric chloride exert the effects of the drug even in albuminous fluids.

II. That the acid increases its antiseptic powers so that weaker solutions are required.

III. The acid sublimate does not interfere with the employment of other measures, as caustics, iodoform, etc.

IV. It is non-irritating.

In the cases where I have employed this solution I have found that the foul odors of a septic root may be overcome by it in from five to ten minutes, which is certainly better than I have been able to do with the mercuric chloride solution, (1-1000) when used alone. Hydrogen peroxide has been alluded to and it is one of the most indispensable preparations that has been introduced to our profession. Dr. Harlan

recommends equal parts  $H_2O_2$  and  $Hg\ Cl$ , (1-1000) equal parts as a powerful germicide.

Carbolic acid is so well and favorably known that I need only mention it to say, that according to Sternberg an 8 per cent. solution was necessary to destroy a pus micrococcus from an acute abscess, while a 5 per cent. solution failed.

Dr. Black's 1, 2, 3 mixture .	{	Carbolic Acid . . . .	1
		Oil Wintergreen . . . .	2
		Oil Sassafras . . . .	3

is a very pleasant antiseptic for rendering instruments aseptic, for root dressings, pyorrhœa alveolaris, etc. New agents are being discovered and introduced and recommended—hydronaphthol, iodol, sozoiodol, etc., but it is not within the scope of this paper to describe them; but I may say that it does not always depend so much on the antiseptic used as it does upon the intelligence of the operator.

When should antiseptics be used? The hands of the operator should be aseptic, *i. e.*, clean. No instrument should be permitted to enter the mouth, or a cavity in a tooth, or a root of a tooth, without first having been thoroughly disinfected. Every cavity should be flooded with a *germicide*, lest in your exploration you might force a nest of pathogenic bacteria into an aseptic pulp, and by so doing inoculate it, causing inflammation, suppuration and death, or you may force a nest of microbes into an empty pulp chamber, which, by their development, would cause acute abscess.

This is the age of antiseptic surgery, and by the use of antiseptics and germicides operations are successfully performed every day, that were thought to be necessarily fatal before the days of Lister. Dental surgeons are saving ninety-nine per cent. of a certain class of teeth (pulpless) that fifteen or twenty years ago were thought fit only for the forceps.

In conclusion, let me urge the necessity for the constant and persistent use of aseptic and antiseptic measures, for it is only by the study and application of them that we can hope to keep pace with the rapid strides in medical and surgical science.—*The Dental Review*.

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DR. PARMLY BROWN.—We understand that this gentleman, who is well known both here and in America, has been invited to pay a visit to Europe. He comes to England in June, and will hold demonstrations and clinics on his system of porcelain crown-work and all-porcelain bridge-work. Dr. Parmly Brown will also demonstrate upon gold crown work, contour gold fillings with the use of the electric mallet, the depressed rubber dam, and other interesting novelties. The Knapp blow-pipe and a small furnace for baking porcelain bridge-work will be shown in operation.—*British Journal of Dental Science*.

## WHY DR. JONES DID NOT SUCCEED.

He was capable, quite commanding in his appearance, and impressed visitors on first sight as a man of promise. Yet he did not succeed. A few *but*s were in his way.

He had skill *but* he was impetuous and impatient—too anxious to see the end of his work, and therefore often had failures where he might have had success.

He had naturally a noble bearing, *but* he was austere and self-important, and therefore offended where he should have been congenial.

He was quite winning in his address, when he made this his purpose; and he easily obtained your confidence, when this was his interest; *but* he was often repulsive, and sometimes abused your confidence by little undefinable acts or language that soon threw you on your guard, and finally made familiarity breed contempt.

He was dexterous in his manipulations, *but* he was careless, often inflicting pain unnecessarily, subjecting his patient to uncomfortable positions and annoyances, making slips that were irritating; and doing some thoughtless thing, which made necessary—"O, excuse me."

He was always ready to serve you, *but* his instruments were never ready; they had not been put in place since the last operation; they were not even clean, and the dirty napkin was still visible; the spittoon was besmeared, and on the floor were strewed pellets of cotton or paper; there was a general unkept appearance.

His reception-room was of the first class; fine furniture, beautiful carpet, costly pictures, and an appearance of wealth that was luxurious; *but* the carpet was dirty, the furniture and pictures dusty, and the whole apartment slovenly.

He was generally in the office and attentive, *but* often had to be sent for—he had only stepped out for a moment, *but* that moment was so uncertain he usually had to be sent for, and was not always easily found.

As unkept as his office might be (he said it gave it the air of business) and as unclean and disordered his instruments (this gave him the excuse to say his patients hurried him too much), yet *he* was always trim and neat and presentable himself; *but* he did often smell of tobacco, and sometimes of that still more disgusting stale smell of its use. It seemed as though there was also a smell of stale beer, though this he repudiated, for he never drank—almost never; that is, in office hours, unless unexpectedly called out with a friend; and, in fact, his smoking was done out of office hours, unless he had occasion to be out on business, and then he had a perfectly effectual way of disguising his breath, or thought he had.

As for his morals, he was scrupulous to the last point, really esthetic



and unexceptionable, handling his patients with kid gloves; *but*, of course, "it was none of his patients' business what he was out of office." With them he was the pink of propriety; with his chums he was—well, "that is none of anybody's business."

And yet he failed, and he was sure to lay the cause of his failure at the door of his best friends rather than himself. It was a mystery how one and another had turned against him. Even his chums visited him only to lounge and be in the way of respectable patients. Finally the last step downward was reached by his office being made, out of office hours, a smoking-room.

How many dentists are killing themselves by having one or more of these ugly *but*s fastened on their face?—*Items of Interest.*



## SOME OF THE DEFECTS OF MODERN MEDICAL EDUCATION.

The recent graduate of a medical college in New York City, who wrote to a daily journal some account of his college experiences, told a very funny and a very serious story. The scramble for seats in the over-crowded lecture-room, the insufficient observation in the amphitheatre, the well nigh total absence of all direct experience with the sick, the vacuity of knowledge of how to treat sick people, the limitation of the student's acquaintance with his instructors, conveyed a very serious moral. The hospital accommodations at the centres of medical instruction are sufficient to give to but very few graduates in medicine the needful chance to gain bedside experience, and these few a mere handful compared with the annual outpour of the medical colleges. Material for dissecting purposes is hard to get and very inadequate to easy familiarity with anatomical knowledge.

The old system of office study with a practitioner is, if carried out at all, reduced to a mere form to comply with the law, and expensive quizzes are the later resort. These quizzes are mainly based on topics likely to be called up at the final examination, and have a further basis on the little specialties of the professors; notes on the lectures are recognized as the material to be crammed, instead of being the suggestion for collateral reading, and familiarity with these becomes the condition of prizes and appointments. Recent graduates confess, and, at times bewail these facts, and the examiners for hospital appointments have ample opportunity to see how large a number of incompetent men are endowed with a diploma, and how limited the supply of practical information among the brighter men. Ultimately the young practitioner gains his

experience, but with the exception of the small proportion who get hospital appointments, the graduate goes direct to responsibility with a limited theoretical knowledge of diagnosis and therapeusis, to flounder his way out as best he may.

The post-graduate schools are a concession to this state of facts. They are the opportunity to men who appreciate their own deficiencies and are ambitious to be well fitted for their work. Here the classes are smaller, contact with expert men is more intimate, and direct observation of disease is afforded. It is a serious question whether the kind and amount of knowledge obtained at the post-graduate schools should not be a prerequisite to the practice of medicine, for the diploma of the medical school does not, to any adequate extent, express fitness to practice. The diploma and the degree, which ought to represent fitness, are really no guarantee to the community. While the great cities furnish the widest clinical opportunities, these opportunities are available to but very few among the crowds that are emitted from the great medical schools.

The great mass of young doctors are absolutely inexperienced when they are authorized by the State to practice medicine. The medical schools have been a unit in their opposition to the abridgment of their prerogative in conducting the examination of their students, and yet the post-graduate schools exist, by reason of the insufficiency of the large diploma-granting schools to adequately fit young men to practice medicine.

This criticism is not valid against the smaller schools,\* where the contact between student and teacher is intimate, and where it is possible to give the student a fair clinical opportunity. The letter of the recent graduate of a New York City school is not devoid of suggestion.—*Brooklyn Medical Journal*.

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### MAKE THE DENTAL OFFICE ATTRACTIVE.

Perhaps no member of the profession has ever fully realized the benefits to be derived from this one source.

Some young man, just starting out in the practice, will say, "that is all very well to talk about and certainly a very desirable thing to do; but I am a 'poor boy,' and that would take more money than I am able to afford." Now it is for just such young men that my remarks are especially intended, and to them I would send messages of cheer and encouragement. They make a great mistake in thinking that they cannot "afford it." True it is that many young dentists do start out as "poor boys"; but it is just as true that as a class they are the most tasteful of

men, and it is only necessary that they should be aroused to the fact that the careful and wise expenditure of twenty-five dollars will go further towards furnishing a cheerful, attractive office, when the proper taste is considered and displayed, than four times that amount in the hands of a person who is aiming only to purchase the finest things, and does not regard the brightness or cheerfulness as a whole. Seeing the matter from the standpoint of a woman, and after thinking a great deal on the subject, it does seem that it will not be saying too much to assert that a young dentist (let him be ever so pressed for cash) cannot make a wiser investment of his money than to put it into the *cheerful* furnishing and fitting up of his office. It will not only increase his practice, but will give him better social standing at once. Then people in general, and ladies especially, expect to find torture enough in the dental chair, and it is but natural for them to desire the surroundings to be as inviting as possible. There should be positively nothing in the dental office that does not suggest neatness and a care for one's comfort.

Let the young dentist devote the same interested thought for a little while to his office that he would to some difficult and delicate operation, and see what he can do in the fitting up of an operating room to make it an attractive place for his patients. In the first place he can astonish and delight *himself* in the result he gets by selecting colors that blend agreeably and are restful to the eyes of his patient while the offending tooth is being cared for. Some of the most delicately beautiful wall paper can be purchased at small cost, and one of the most important things is to have the walls of an office not glaring but soft and restful in every tint. It is indeed wonderful to see what a change can be made in the looks of a room by the one thing only of selecting agreeable colors for the wall, whether of paint or paper. Dark walls are to be avoided; they are cheerless and depressing, while a perfectly white wall is not desirable, because of the glare. Both extremes should be avoided, and a soft, mellow light, full and pure, should fill the room if possible. In this connection it is not out of place to say that the same rule will apply to the selection of a carpet. It should be bright and cheerful, but not gorgeous. It need not be of velvet or brussels to be beautiful, but it ought to be the best of its kind to be the most useful and economical. Some of the bright woolen carpets are marvels of beauty and can be bought at very moderate prices.

There are many other things that might be mentioned, but they will suggest themselves naturally, after the walls and the floor are nicely covered, such as comfortable chairs, a few interesting books (for visitors) the dental journals, dainty ornaments here and there, the odor of freshly cut flowers, etc., etc.—LUTIE C. LUCKIE, in *Southern Dental Journal*.

TREATMENT OF CHILDREN AND CHILDREN'S  
TEETH.

BY PRACTITIONER.

In a recent issue of the *Archives* was an article from the pen of an excellent dentist, on the interesting and soul-stirring subject, "How to treat children and children's teeth." Now, if there is one branch of the dental profession which we are interested in, and which we would like to know more of, it is the treatment of children and children's teeth. The doctor tells us all about the first entrance into the dental office, much as he would tell of a lamb walking into the lair of a lion, and then goes on to give us some very excellent advice about interesting the "timid little one." The doctor's lines have been cast in very pleasant places, by gently murmuring streams, and in very cool and shady nooks, where the citron, fig and olive could be had for the picking, or he is giving us taffy. With all due consideration for the doctor's feelings, we are inclined to the opinion that he is giving us taffy. If the doctor is telling us nothing but the pure unbiased truth, then all we can say is that his experience has been a trifle different from ours. We would like to meet a "timid little patient" once in a while, just by way of a change. If the doctor can tell us of any way by which we can tell little patients who are "timid" from those who are otherwise he will gain our life-long gratitude. We are aching to give up the little patients who are otherwise, and stand with open arms ready to receive the ones who are "timid." Our life has become an aching void; a dreary and desolate waste, from constant contact with the little patients who are otherwise.

We have often, in our mind's eye (we may as well state right here that our natural eye is somewhat jammed up just at present, the result of a slight misunderstanding between one of our little otherwise patients and ourselves. This slightly jammed-up-edness compels us to look at the matter in hand with our mind's eye), seen those dear little patients who would come into our office, and be nice and quiet, and "timid," and set an example for much older people, but they have been seen chiefly in our mind's eye. In actual, everyday life we have found them rare; so rare that when we do get one, we lose it before we realize what a treasure we had.

We have a vivid recollection of a youthful future-president bouncing into our office on a bright, sunny morning and informing us that mamma had sent him to have his teeth filled. We were all smiles, for we thought that here is a nice little boy who acts like a little man, and stands with fortitude the few twinges of pain that will have to be inflicted; we will tell him a few stories, our assistant will tell him a few, and at odd



moments we will get him to relate some funny experience that he has had at school, and everything will go on beautifully, until finally the operation will be over, and we will dismiss our little patient with the hope that at last our turn to have the good little patient had come. But we were fooled; basely taken in. We knew it very soon after operations begun, but before that we thought ourselves fortunate. If we had taken the trouble to look that boy in the eye we would have seen that he was loaded for bear and warranted to hit the mark at almost any distance. But we did not look; we felt secure and went calmly on to the rude awakening from our pleasant dreams, which we had been having of model little patients. It would be painful for us to give the details of that operation, suffice it to say that, in an unguarded moment, our assistant got in front of the little patient and was violently kicked in the stomach, and landed against the plate-glass window in front of our chair; our spectacles were bent so that we looked over one glass and under the other; several articles of glassware were broken; instruments which our little patient had knocked out of our hand, were distributed around the room, and several other trifling incidents happened which made the operation, though short as we could possibly make it, extremely lively and interesting. But the dear little boy came out all right and with flying colors, and while he went gaily home to his fond, anxious mother, we with sad heart and ruined temper, closed our office for repairs.

The good doctor who offers such excellent advice about the treatment of children, will pardon us if we sometimes think that a good, big, fully developed club would be the most effectual treatment that the dear little thing could receive before undergoing a dental operation. But perhaps we are wrong. Our conscience has become hardened from the many violent conflicts we have had with our little patients, so we probably could not give a just opinion in the matter.—*Archives of Dentistry*.

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### APPEARANCES.

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Our success depends much on our appearance. The first impression patients receive on seeing us, or on coming into our office, generally remains. If everything is neat and clean, and our appearance and manners are intelligent and professional, there is a favorable impression that is worth gold. But if shiftlessness reigns, or there is an unkept, careless appearance, it requires much good work to obliterate first prejudices.

And it does not cost much to be good looking. It is not necessary to be a dandy, a coxcomb, or even "as pretty as a woman." But we may have transparent skin, by thorough cleanliness; we may make beard and hair an ornament, by tasteful care; we may have attractive professional

air without much extra cost; we may have urbane manners, and warm smiles, and an intelligent and unconscious glow of an honest heart. These qualities make even a homely man good looking. Both the office and the person may be made quite presentable by plenty of soap and elbow grease. It is not a gaudy appearance that attracts. If everything about is scrupulously tidy and clean, it goes a good way toward giving an impression of intelligence and skill.

Thrift and ability supposes general surroundings of a high order, and it pays to have them, if *we are made for them*, or can by great effort prepare ourselves for them. The best office in the land would be a burlesque with a blockhead in it; and it would only make the picture the more grotesque for the blockhead to mimic sense. The office does not make the man, but the man the office; just as the instrument does not do the work, but the dentist behind the instrument. This is the reason the numskull who expects to jump into a good workman's boots by buying his office and the "good will," finds there was one thing lacking in the inventory—brains. So if you are really an inferior dentist, with an inferior social standing, and there is not much prospect of more than a moderate improvement, we advise you to have an inferior office, and not deceive your patients by having an office superior to yourself.

But perhaps there is little use in writing these things, for we are generally what we appear to be. The *man* must be improved to the very core to materially improve his surroundings.

Yet we see dentists who do good work, and are intelligent, nice men, who give the lie to their real character by having an inferior office; by lacking a professional presence they wrong themselves and unnecessarily repel many of the better class of their community. They had better forego all luxuries in their homes, and live on half rations for a year, and put savings in a *well* furnished, advantageously located office, a nice professional suit of clothes, best instruments, a sumptuous chair, and everything that will bring them into the social position of their best patients. If we have said a word that shall spur this class up to take on better surroundings, and a better personal appearance, we shall be pleased.—*Items of Interest.*

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PULVERIZED PUMICE AND GLYCERIN, mixed and kneaded into a stiff dough, will be found useful for taking impressions of tooth-cusps or other surfaces which it is desirable to reproduce in metal to serve as dies. Molten metal of any kind can be at once poured into such molds. The dough may be agreeably perfumed with a few drops of lycopodium.—*H. P. Osborn, South Orange, N. J., in the Dental Cosmos.*

## FAILURE TO ENFORCE THE DENTAL LAWS OF CALIFORNIA.

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The following report on the dental laws of California was presented at the meeting of the Southern California Odontological Society, held in Los Angeles, June 5, 1888 :

*To the Members of the Southern California Odontological Society :*

Your committee on dental legislation beg leave to make the following report :

In pursuance of instructions given at your last meeting, the committee caused the arrest of several of the dentists practicing in violation of law in this city. Through the misinterpretation of the law and other *legal* procedures, no convictions were obtained. The most open and flagrant violations were instantly acquitted, and a trial by their *peers* seems to be as soft a thing as the non-graduate wants. And we, your committee, feel that the present law is but partially effective, inasmuch as a conviction will depend more upon the jury than upon the offense committed. California for years was the dumping-ground of eastern dental refuse. The passage of stringent laws governing the practice of dentistry in the eastern states drove them from their native haunts, and California, with its many attractions, and no dental law, was inundated with dentists. The passage of the dental act in 1885 has partially checked this flood of dental drift, and it will be noticed, upon examining the report of the State Board of Dental Examiners, that most of the applicants to practice have been graduates, and in this city, out of the ten new (registered) dentists, seven are graduates, a very creditable showing. Now that the intention of the law is to be defied, and that defiance to be based upon the verdict of a class of men whom this law was framed to protect and benefit seems indeed too bad. A law that will cause the dental profession to be better educated would be one of the most beneficent imaginable, and we, your committee, would urge that a proper amendment be offered at the next session of our legislature that shall completely close the back door and allow none to begin practice in this State without having first properly prepared himself, and we, your committee, deem graduation from some reputable college as absolutely necessary before beginning practice. The opponents of such a measure will strive to make out that we are endeavoring to create a monopoly and scheming to extort colossal bills from the bloated bondholder. A few figures relative to the number of dentists to the population in California is very interesting to us, and furnishes food for reflection. The last report of the State Dental Examining Board shows 557 legally registered dentists, and to this number can be added at least 40 more who are practicing without having registered, giving us one

dentist to about every 1,600 men, women and children. Eliminating the Chinese, it makes about one dentist to every 1,200 whites. Illinois, with three times our population, has only 925 dentists in practice. Wisconsin, with a third more people, shows but 357 dentists. Iowa has but one dentist to every 4,500 people, and the whole United States shows but one dentist to every 4,000 people. The editor of the *Dental Review* estimates that in 100 years more the dental profession will have increased so that there will be 400,000 dentists in practice, and the ratio will be one to every 2,500. Now, gentlemen, you will observe that we have passed the line and are trying to do what no other country in the world ever before attempted, viz., to support one dentist to every 1,200 or 1,500 people. It is not necessary to enter into a discussion of what the result will be. Every one must judge for himself and act accordingly.

The dental department of the University of California (which, by the way, is one of the best conducted dental schools in America), turns out per annum as many graduates as is needed to fill vacancies in this State, the average being about the same as the average per State throughout the Union. Our ranks are now full, and new recruits are sure to be added from the very highest order of dental practitioners, who have broken down in health in pursuit of their practice in eastern cities, and have come to this State in hopes of gaining our greatest blessing. This class of men usually seek the country, and it is not an unusual thing to find two or more located in towns of less than 1,000 population. They practice one, two or three days in the week, and attend to their orchards or vineyards the rest of the time. And we feel justified in saying that nowhere in the whole United States can be found as many good dentists in small towns as can be found in California; in fact they average higher than in the city. And now, gentlemen, we think that we have shown that there is no good reason for leaving the back door open any longer. "Charity begins at home," and we owe it to our students and the public that those who henceforth begin practice in this State shall be competent and have received the prescribed college degrees.

E. L. TOWNSEND,

J. M. WHITE,

C. O. BALDWIN,

*Legislation Committee.*

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NEARLY EVERY DENTAL journal in the country has had a "whack" at Brother Welch, of *Items of Interest*, for carelessness in the matter of giving credits to the articles copied. THE DENTAL ADVERTISER compiled an account of the commencement exercises of Meharry Medical and Dental College, which was copied entire by *Items*. Remissness, as usual.



## SPECIALTIES.

Dr. John A. Larrabee, of the Hospital College of Louisville, Ky., is reported in *Progress* to have said the following in regard to specialties in medicine :

I will take this opportunity to answer in public what some of you have asked me privately in regard to the advisability of your taking up a specialty when you leave college. The field of medicine is a very large and comprehensive one. It is quite impossible for one person to be entirely proficient in all its branches. The division of general medicine into the various specialties has been fraught with much good to the profession, and no doubt to-day we know many things about the science that otherwise we should never have discovered. While, therefore, I endorse specialties and patronize specialists, I am convinced that both may become an injury rather than a blessing to the community no less than to the profession. Specialism in medicine is not new. It existed in the earlier history of the science and corresponded to periods of greatest learning and culture. When that awful cloud of ashes settled down upon Pompeii and Herculaneum, it blotted from existence a people far advanced in civilization. Excavation has revealed evidence that all the specialties of to-day were practiced there. Specula-uteri, auditory and ocular instruments mark the progress of medical as well as collateral sciences.

It almost makes us shudder when we think that with all our boasted civilization and education we have progressed so little beyond that which was attained by the ancients—that perhaps after all we may be only reproducing or re-enacting the scenes of thousands of years ago. Many of our wonderful discoveries of to-day were, no doubt, perfectly familiar to many of the older nations. We live and move in circles and not in direct lines.

The present is certainly a wonderful age of advancement. Never in the history of the world has there been such a scramble for place and distinction in our medical ranks. The journalists present will tell you that so rapid is the advancement that it is almost impossible to keep up with the literature of the day. Job must have longed for this era when he said, “Oh that my words were now written: oh that they were printed in a book.”

It is very probable that when all the new theories have been sifted and all that is written shall be assorted, that a very small book will contain all that is found to be *true*.

It is not in our profession alone that specialists exist. The mechanic and the artisan are specialists. It takes eight men to make a single shoe, neither of whom could make it alone. You know the old saw, that it

takes nine tailors to make a man—and really, I don't know how many specialists it would take to make one good doctor.

Seriously, the specialist should be the *outgrowth* of a general practitioner—a gradually developed predilection after years of experience—then he becomes a useful man in the community and an ornament to the profession. Any other course than this leads to superficial knowledge.

The youthful specialist is unable to distinguish between a local and constitutional trouble in the full degree of its importance. The children's doctor must know something of skin diseases. It would be impossible to send all such cases to the dermatologist. Dr. Tilbury Fox, the greatest authority on disease of the skin, when asked, on one occasion, what was his specialty, replied laconically, "The skin, and all it contains." When I go abroad to attend medical conventions, I am frequently asked, "What is your specialty?" and when I am forced to acknowledge that I am only a *scrub doctor*, I feel that something has dropped. There's decidedly too much tendency to exalt the specialist at the expense of the general practitioner.

I see a great many dental students attend these lectures. If you expect to become competent dentists you must also be doctors in medicine. Again the specialties are well filled. I can only cite you one not yet occupied. No one has yet made a specialty of the umbilicus, and it is a "*grand opening*." Think of a sign hung out, "Practice limited to diseases of the umbilicus." True, the diseases of this part of the body are few, but with specialists in this line, there is every reason to believe that the number would be greatly multiplied.

Besides, some microscopist has discovered a micro-organism inhabiting this region—and there would be decided advantage to have a "bug"—a genuine, live "*bacillus umbilicalis*"—to start with. So much then by way of apology for trespassing on the rights of the dermatologist.

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## ADVERTISING.

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We have received a number of letters from esteemed correspondents, enclosing copies of newspaper cards and asking whether, in our opinion, they are contrary to the accepted code of dental ethics. In its proper sense, to advertise is to give notice, advice or intelligence; as "I will advertise thee what this people will do;" (Num. xxiv, 14); and in this meaning advertising is entirely proper for dentists, or any professional man. But in its more modern sense, advertising is the extravagant laudation of merchandise, wares or commodities, which one has for sale. In this meaning, no respectable professional man can indulge in the practice. If he places his personal services on the same plane with the

ready-made clothing of the merchant, to be sold to him who will pay the most, he is a huckster, and has no place with professional men, for his professional services are not reserved for those who are in distress, but are vended out to whomsoever can be prevailed upon to pay their price.

It is entirely proper for any professional man to advertise (apprise) people of a change of residence, for instance. He may, with propriety, inform them that his practice is confined to any particular specialty, or that he is prepared to perform unusual operations, such as oral surgery, or that he makes continuous gum-work, or obturators, or even that he keeps nitrous-oxide for administration. He may publicly present a card giving his office address and business, but he may not vaunt his skill, or claim superior ability, or boast of special and exclusive privileges. He cannot call attention to his unusually low prices, because these methods belong to trade, and not a profession. In short, it is the spirit which animates him and prompts his public notices that stamps his status. We have seen newspaper advertisements, occupying, perhaps, considerable space, which were not in contravention of the code of ethics, and we have seen three-line notices which were entirely unprofessional.

It is extremely difficult to reduce to a written code all the laws which should govern in professional matters. There is an unwritten law which is superior to all enactments, and which cannot be infringed without branding the man as unprofessional. One cannot continually depreciate his professional neighbors and disparage their operations, without subjecting himself to the penalties of the written code. But there is a way of doing this without actual words, by a shrug of the shoulders, a turn of the lip, a sniff or a sneer, that will not come within the written law, but which will, perhaps, in even a greater degree, be unprofessional. Not only this, but it will be infinitely meaner and more rascally vile and dishonorable than an open, sweeping condemnation in words. So a newspaper card may be so contemptible in its implications, without actually overstepping the written code, that it is more unprofessional than the braggart vaporings of a silly fool.

A man may offensively advertise without resort to newspapers or hand-bills. He may affect peculiarities of dress, or of conduct on the streets, for the purpose of calling public attention to himself. He may seek notoriety in many ways, that shall mark him as a charlatan. He may continually boast of his great achievements, or of his overwhelming practice, in a manner that writes him down a professional quack. We have heard the most offensive advertising speeches in dental society meetings, and that, too, from men who would be the first to call out for crucifixion of the dentist who should publish a card in the newspapers. We have read accounts in the dental journals of the unvarying success in the treatment of certain diseases, by men who had the hardihood to affix

their names to the braggart advertisements of their professional skill — men who virtually claimed to be exempt from the common lot of mankind, and to be infallible and beyond mistakes. We have editorially struck out more than one such pitiful exhibition on the part of writers for this journal, for these are some of the most offensive forms of advertising.

We have heard of an obstetrician whose engagements extended a year in advance, and could not but wonder at the prescience exhibited by—somebody. But the braggart swaggering of this man has been exceeded by some of our modern dentists, who, if they may be believed, have their appointment books filled for a term almost equal to that of a natural life. Not long since we overheard a dentist, who has not the reputation of possessing anything more than a respectably good practice, who has no assistant and who does any kind of work that is offered, boasting that each week he rolled out from fifty to seventy-five dollars in coin for crown and bridge-work. A little calculation was all that was necessary to prove what an unconscionable liar and an offensive advertiser he was.

We might instance other ways in which dentists may unprofessionally advertise themselves. But the whole would be lost upon him who cannot see that the code of dental ethics is not an inflexible written law, by whose measured paragraphs the actions of men who claim professional status are to be judged. It is rather an indication, a sign, an intimation of that higher law, that elevated, pure, professional feeling which unerringly guides a man in professional ways, for he who prostitutes an honorable position to unworthy ends and purposes, who degrades a high calling to mere money-getting and sordid avariciousness, is not a professional man, no matter what may be his station or how correct his outward deportment. The true professional man is a gentleman, and in all his professional acts he will be prompted by gentlemanly instincts.

We might as well preach the sermon out, for the text, like charity, covers a multitude of sins. Dental journals sometimes, thoughtlessly we believe, encourage the advertising proclivity of dentists. One such proposes—for a consideration—to carry the name of any dentist who will pay the fee, for one year, in a conspicuous page especially devoted to this purpose. It is not difficult to imagine the class of dentists who will avail themselves of this delicate offer. Another publisher issues various editions of a so-called dental journal, and for a comparatively small sum will print a special edition of one of its issues, with the name of the patronizing dentist at the head as editor and publisher, a certain amount of the space to be devoted to advertising him personally, after the manner of the advertising sheets of dry goods and clothing merchants. Such a thing *might* be made respectable and useful, but it is not at all probable that the money will be paid and the offer taken advantage of by a very reputable class of dentists. To our great surprise, we find the excellent



and reputable *Archives of Dentistry* exchanging advertisements and offering clubbing terms with this affair.

Sometimes a young dentist who does not immediately leap into a great practice, dazzled by the apparent success of some advertising practitioner, is tempted to throw reputation to the dogs and sacrifice the esteem of his reputable brethren for the money which he expects to gain by unprofessional practices. He gets the idea that all one has to do is to advertise widely and recklessly, and certain pecuniary reward will inevitably follow. Now the real truth is, it requires greater business tact and ability to succeed by advertising than without it. The man who can make money in a profession by advertising, certainly could do so without it. Of all those who adopt this method, but a small percentage succeeds. The ratio of failures among advertising dentists is much greater than among those who pursue a professional course, because all intelligent people comprehend the fact, that an advertising professional man is an anomaly. They believe that there must be something radically wrong about him, or he would not be obliged to descend to methods which all recognize as disreputable. An advertising doctor, lawyer, preacher or dentist, is known to be at war with all respectable professional ideas, and his patrons as a class must be sought among the ignorant, the uncultured and the generally impecunious. Such men are usually regarded as quacks and shysters, and if they succeed it is in spite of, and not because of, these methods. We have personally known a number of promising and able men who, not willing to wait for that plant of slow growth, public confidence, have entered upon a career of advertising, placed a great gulf between themselves and their professional brethren, and too late found out that success is not attained by violent measures. The only secure way is, by continued study and constant self-culture properly to prepare themselves for the service of their fellow-men, and by faithful work and honest, upright professional conduct, to prove themselves worthy of the patronage which, to such, will as surely come as the day follows the night.—*Independent Practitioner.*

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FOR OVER A YEAR we have been using, with uniform success, a Pink Joint Cement (made from Fletcher's Dental Porcelain,) for preventing discolored joints in artificial work. Our method is to place a small quantity of the pink phosphate over the joints *before* waxing up and then to thoroughly pack the joints *inside* before packing the mould with rubber. This excludes all rubber from the joints. It is also very useful in repairing or replacing broken sections by placing the cement thinly mixed on the ends of the section before securing to place.

## DOUBTS AND CERTAINTIES IN SCIENCE.

Doubts may be developed into certainties, and suspicions may be traced along their legitimate lines till they terminate in facts. But science is not advanced by holding forth as already established those things which are still doubtful and uncertain. Let the doubts be fully expressed, the suspicions set forth as clearly as possible, and good may result; but let not claims be made in regard to them outside of or beyond their true nature.

We sometimes fear that a few of our investigators are not as careful as they ought to be in discriminating between what is known and what is guessed at. Some readers of the *Journal* will remember a scene that occurred long ago, when microscopy was somewhat new in the dental profession. At an important meeting Drs. Atkinson and McQuillan expressed different opinions as to what was seen on a certain slide, through the microscope,—not what each had seen elsewhere and at other times, but as to what was to be seen by alternate lookings at the same slide. Both had good eyesight, and were familiar with the use of the instrument; and both had the confidence of the profession. Did this show definite determination? or did it not rather teach the comparative uncertainty of microscopic research with high powers? Did it not suggest that very close and repeated observations were required in order to warrant positive statements? It is not strange that, at the late meeting of the Mississippi Valley Association, Dr. Atkinson, alluding to this very class of researches, advised his hearers not to believe implicitly that investigators always see what they describe.

Again, that prince of microscopists, Prof. Heitzman, described something as he saw it. Other coöperating experts testified that what he claimed was a deception, caused by want of proper adjustment.

Another case: Less than two years ago, the lamented Walter A. Dunn, of world-wide fame as a microscopist, prepared hæmal crystals from a fresh drop of his own blood, and also from a portion of a blood clot taken from the cranium of a murdered woman. The respective crystals were put on separate slides, and when submitted to the microscope, Dr. Dunn regarded the experiment as satisfactory and conclusive. To our own eyes, not unfamiliar with microscopic research, and somewhat acquainted with the subject of crystallization, the two slides showed crystals as much alike as white beans or mustard seeds. There was no observable difference. Yet two men, both claiming to be familiar with the microscope, one having LL. D. added to his M. D., and the other a professor of histology, etc., in a medical college, declared that while the objects on one slide might be the crystals claimed, those on the other

bore no resemblance to them—no likeness to those on the other slide—and gave no evidence of being other than accidental matter obtained from débris. We were all on oath; and these investigations did not require high powers.

Not long ago, our micro-trinity, Heitzman, Bödecker and Abbott, who are entitled to and have the confidence of us all, agreed that they saw something, (no matter what,) in or through the microscope; but Dr. George Allan, long ago our pupil, but for a long time our teacher, with the assistance of the microscopist of Harvard University, could not see it in that light, though using the same slide. When “the stars in their courses” fall out, on which side must we, “tallow-dips,” rally?

For present purposes it matters not, in this affair of three to two, which is right. We are trying to convince our readers that microscopic revelations, as yet, cannot, in many cases, be so accurately and reliably interpreted as to warrant the positive assertions of some bacteriologists and very many microscopists. And that microscopic research in reference to microbes has, as yet, all the uncertainties of similar investigations in other directions seems virtually admitted by our friend, Dr. Black, when he says, “These microbes are the smallest of microscopic objects and were, of course, unseen until very recent times.” And yet it is common to describe them in detail with as much assurance and more positive assertion than any would think of using in the description of horses, cows and sheep.

Some time ago the *Medical Record* had a brief item calculated to excite caution in the line of thought under consideration, and caution is all we ask. Abandon the investigations? No! And don't cease to report experiments and impressions. But cease to claim demonstration and certainty for mere investigation and suspicion. But here is the item from the *Record*:

“Dr. Mariano Semmola, on bacteriology and its therapeutic relations, says: ‘We know very little of the normal condition of the blood, and biological chemistry is still in its infancy. Man cannot separate himself from these millions of parasites among whom he lives. That bacteriology may be a guide in the cure of disease, we must not only learn all we can of the microbe itself, but, more important than all, must ascertain all that is possible of the conditions of the field of culture. The science of the present knows nothing of the conditions of these fields of culture in living organisms. It is thus evident that in the present condition of bacteriology it cannot be taken as a guide for the treatment of internal diseases. The older schools of medicine spoke of organic dispositions or tendency to such and such a disease. This expression had no meaning, but it expressed the fact. When bacteriology speaks of a need for a special field of culture it says the same thing, because we do not know of

what the field of culture consists. Therefore this cannot be called a science, because a science is never composed of unknown things; it goes from the known to the unknown. If a man supposes a fact instead of demonstrating it, the phenomena of Nature are not reproduced. When he resorts to hypothesis, the power of man disappears. If Nature's laws are not respected, the telephone does not work, the electric light does not flash, the steam engine stops. The doctor, then, is the only one who pretends to become the master of Nature without knowing her laws.' Referring again to the failure of medicine to follow up a discovery in the scientific way with thorough research and demonstration, and its tendency to accept conclusions quickly, Professor Semmola said that 'Modern bacteriology may lead the way to the most fruitful field of inquiry in the future, but for the present it has produced no practical results in the cure of internal diseases.' It has not, he claimed, been demonstrated in what measure microbes are the causes of diseases. He, therefore, hoped that the younger generation would continue experimental researches with the thoroughness of method which the great masters have transmitted to us. They must renounce their preconceived ideas in medicine, and interrogate Nature without torturing her. Scientific independence must be preserved. They must not proceed without measuring their steps. He trusted that his desire for scientific independence in such researches would be echoed in this land of independence."

"If a man would be wise let him think, *think*, THINK." And let each one think for himself, and not blindly follow others. The great apostle, once Saul of Tarsus, spoke by inspiration, yet the Bereans were commended as "noble, \* \* \* in that they \* \* \* searched the scriptures daily whether those things were so." Listen like them, "with all readiness of mind," but search and verify.—*Ohio Journal of Dental Science*.

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PAPER FOR CLEANING LENSES.—Prof. S. H. Gage, of Cornell University, recommends, as preferable to linen or chamois skin, the so-called Japanese filter paper, the bibulous paper often used by dentists in filling teeth. It is soft and flexible, absorbs liquids readily, is less likely to contain gritty particles that are liable to scratch the lenses, and it is so inexpensive that when a piece has once been used it may be thrown away. Every director of a microscopical laboratory appreciates the difficulty of getting students to exercise the proper care in cleaning objectives and eye pieces. Every large laboratory is sure to contain some students whose genius for scientific study is exhibited chiefly in the careless handling of delicate apparatus. Doubtless if in a microscopical laboratory each student were provided with a quantity of this paper, fewer valuable lenses would be injured.—*Scientific American*.



## THE CHINAMAN'S TEETH.

Dr. Talbot (of Chicago) says, speaking of irregularities: "There are never any irregularities in the teeth of the Chinese. The nomadic races also have perfectly developed teeth or arches. In new countries irregularities may result from intermarriage of different races—the crossing of racial peculiarities. The abuse of the teeth is due to depraved hygiene—not to civilization. The nearer the monkey, the further from man, the better the teeth; the less we depend upon them, the less perfect they become."—*Western Dentist Journal*.

After quite an extensive examination of the teeth of the Chinese, I feel that the statement of Dr. Talbot is based upon anything except actual observation. A regular denture among them is more of a rarity than among the whites. In meeting them upon the street the various irregularities are constantly observed, and upon closer examination all the diseases common to the whites are found. I have observed all forms of irregularities, and am fully conscious that irregularity of the teeth is as prevalent with the Chinese as with any other race.

E. L. TOWNSEND, D. D. S.

237 South Spring street, Los Angeles, Cal.

We confirm Dr. Townsend's observations.—EDITOR.—*The Practitioner, Los Angeles, Cal.*

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NOT IN THE TEXT BOOKS.

Boards of Pharmacy have considerable hard work attendant upon the examinations of candidates, but at the same time they have some advantages denied to their brother pharmacists by reason of much of the information they receive not being found in any authorized publication.

The Michigan board at a recent examination, for instance, were informed that deliquescence was "that which is lacking," and that methylic alcohol was "stronger alcohol," while ethylic was the diluted. Carbon was found to be the source of saltpetre, iodine "a gas that cannot be measured," Mucuna being "a rock." Organic acids were those having energy, thereby differing from the inorganic acids, which have none. Menthol was discovered to be a white powder obtained from the stomach of a pig, while calomel was "a white powder obtained from the root." Corrosive sublimate was a yellowish-white powder also obtained from the root.

"Benzoic acid is found on the sea coast," while "glycerine is produced from eggs and is adapted to dissolve coagulated albumen, but amylum or corrosive sublimate impairs its activity." They learn that spts. of nitre "should contain from 40 to 60 per cent. of nitrous ether," and that the *physical* properties of epsom salts were "about one ounce."

Spts. lav. co. is used in Fowler's solution "for pleasure," and hydrochloric acid is used in the manufacture of fl. ext. ergot "to precipitate the hydrocyanic acid," and furthermore "as the ergot is a fungus the acid destroys its tendency to propagate and renders it fixed."

They learn of a new method of manufacturing sulphuric acid, viz., by oxidizing mercury with nitric acid. The chemical reaction which takes place in mixing a seidlitz powder has been found to be "efflorescence," which occurring sets free chlorine.

The difference between an atom and a molecule has not been definitely settled, as while one candidate decides an atom to be "a physical motion," while a molecule "moves by heat like a locomotive," another deems it a question of weight, one weighing 2,000 pounds but not able to remember the weight of the other.—*The Pharmaceutical Era*.



## TOO MUCH INTEREST IN MEDICAL EXHIBITS.

During the recent meeting of the International Medical Congress, a reporter of one of the Washington dailies was instructed to get a list of the various exhibits. The first exhibit he encountered was a tremendous crowd of people around a little, defenceless urn containing cocoa, which was being passed around in liliputian cups.

"Are you a doctor?" asked the gentleman in charge.

The reporter admitted that he wasn't, but he had an uncle who was. This entitled the reporter to a cup of cocoa, which he took in one small-sized convulsive swallow with great gusto.

Passing a man with the prettiest, most tastily decorated stomach-pump it had ever been his privilege to gaze upon, the reporter reached the pepsin stand, where he took enough pepsin to enable him to digest the cocoa. A small sample of cod-liver oil was presented and taken as a preventive for consumption. Everybody was cordial and free-hearted, and the reporter's gastric apparatus was treated to some remedy for heart trouble for a change. Up to the time he stopped keeping count, he charged his alimentary canal with a box of baby food, seven different kinds of tonic, any one of which was warranted to make your hair curl, two glasses of orange wine, and a dose of bromo-caffeine. He also took a look through a microscope and a couple of electric shocks.

It was 5 o'clock in the afternoon when a man, who called himself a "Reppershentative Zhurnalst," was found groping wildly about the hall.

"Anything we can show you?" asked one of the affable exhibitors.

"Yesshir; show me zher man ash got the stomich pump."—*Lancet Clin.*

## TO CLEAN THE HANDS, ETC.

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Dr. Francis L. Haynes, of Los Angeles, Cal., in an article on "Antiseptic Solutions and Wound-Dressings," in the *Southern California Practitioner*, recommends the following precautions to be taken before commencing a surgical operation. Would it not be advisable for a dentist to observe at least a portion of the precautions before commencing operations on the mouth?

"Take a bath before operation, and put on clean clothes. Remove coat, vest and suspenders; slit up shirt sleeves, and turn them up and fasten above elbows with safety pins. Put on long, clean linen coat. Trim nails, scrape out subungual spaces, scrub arms and hands for five minutes with soft soap and water, paying minute attention to subungual spaces. Rinse in pure water. Then scrub faithfully with 1:500 sublimate; then soak for two minutes in 1:500 sublimate. Now proceed to operation without drying the parts. In using a towel you will possibly contaminate your hands. After having prepared your hands for the operation be careful not to feel the pulse or to touch anything whatever except the instruments and the seat of operation. If by accident you should do so, immediately wash your hands again in sublimate solution. During operation, wash your hands occasionally and dip them in 1:100 sublimate, which should be placed near you in a large bowl, and which should be renewed by a nurse, whenever it is used. The assistants should use all the above precautions."

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## SUPPORT THE JOURNALS.

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In the report of the meeting of the Illinois State Dental Society, will be found some sensible and timely remarks concerning the duty that dentists owe to their professional journals. There can be no "profession" without a literature of its own. The very term implies literary culture. If those engaged in any vocation are doing scientific work, there must be journals of some kind to make a permanent record of what is done, and those journals will usually be a faithful index of the status of those whom they represent. The stream cannot rise above its fountain head, and if dentists desire a literature that will be a credit to them in the eyes of the world, that shall produce the impression that they are thinking, studious men, the journals must be supported, not only with subscriptions, but by contributions from the writers of the profession. Our dental journals usually have a large exchange list of medical journals, and the impression that is made upon the editors of those journals, upon the representative

men in medicine, depends to a large extent upon the manner in which they see our professional literature sustained. If any journal that stands as a representative of the profession to which it belongs shall mainly be made up of extracts from other journals, and evinces a dearth of original thought and a lack of original communications from those who should be its contributors, it marks a low tide of professional interest and reflects severely upon professional status.—*Independent Practitioner.*

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### TEETHING TROUBLES OF A CROWNED HEAD.

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Under this caption the Paris correspondent of *Truth* writes: It used to vex Frederick the Great to think that the ruck of human beings would only see in kings, beings having little in common with ordinary mortals. I try not to be with the ruck, and so repeat now what I hear of the teething troubles of Alphónso XIII. They are said to be complicated with the nervous disease from which so many emperors and archdukes suffer, and more especially in the Carolinian branch of the Lorraine-Hapsburgs. From this branch his infantine majesty comes in direct descent through Queen Christina. The Archduke Charles, Napoleon's opponent, was a man of capacity all round. Only, he was so troubled with neurosis that he had fits constantly, and after each was more a log than a sentient human being. A great battle was once lost by Austria because when he was chief in command he had a fit which deprived him of speech and memory for three hours. Instead of marrying some contadina of base blood and fine health, he espoused a cousin, and his eldest son took for his wife his own niece, the Archduchess Elizabeth, grandmother of the youthful King of Spain. This Princess, having had a wide experience in treating imperial children afflicted with the ancestral neurosis, has gone to Madrid to attend to Alphonso XIII. Given the king's malady, it does not follow that he will be an idiot. Charles V. and Peter the Great were both subject to fits, and yet men of political genius. However, there is a danger of cerebral degeneration at an early stage, and more than a danger at a late stage. The late Emperor Ferdinand was obliged by his epileptic affection to abdicate. He had such frequent attacks as to be unfit to give audiences or to show himself in public. The neurosis dates a long way back, to the family of Isabella the Catholic, and was perpetuated by in-and-in marriages, so that the Spanish Hapsburgs dwindled into morose idiots, and the Austrian Hapsburgs were scarcely less degenerate when the Lorraine blood came in to renovate them somewhat. What renewing potency it had is now pretty nearly used up, and degeneration goes on apace. The Court doctors at Madrid, of course, protest



against the rumors about the King's health. It is the way of all such to deny that royal patients are ever ill until they are past the power of medicine to cure. The Duc de Montpensier's faction are active because his majesty "cuts his teeth" so hard.—*British Journal of Dental Science.*

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THE "DAILY TELEGRAPH" ON DENTISTRY.—It would be rather interesting to learn what particular form of compact exists between the American dentists and the *Daily Telegraph*. That paper has now upon several occasions employed one of its nimble-fingered writers to take up an elaborate puff of transatlantic dentistry. After the usual talky-talky about anything but the subject of the leader and a profuse sprinkling of more or less hackneyed quotations, the gentleman who was recently "put on" to write the leader, informs his readers what marvels American dentists have done, how they have enjoyed the confidence of crowned heads and generally "run right away" from their less gifted English brethren. Of course it is well known by all who are in the charmed circle of the "daily press" how utterly valueless such articles are, since they only too frequently are knocked up from a few pamphlets or even verbal directions given by the editor, and are usually by the hand of a writer who knows little or nothing of the matter in question. Still such inaccurate press work is very detrimental to the interests of the public at large, as it often gives the less scrupulous members of our profession a handle wherewith to gain their own unworthy ends at the expense of the public.—*British Journal of Dental Science.*

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THE "DAMNATORY" EFFECT OF ARTIFICIAL TEETH.—A correspondent favors us with the subjoined cutting, which exemplifies that the uses of artificial teeth have a more serious and doctrinal influence, than one at the first blush might suppose. A young country dentist recently had recommended to him as a patient the Bishop of his diocese. His first commission was for a complete set of teeth, and a day was appointed for the prelate to call and fit them in. It was a moment of anxiety—and, indeed, professional importance—to the dentist, as he watched his lordship examining himself and his new teeth in the mirror. Imagine his horror, therefore, when he distinctly caught an expression of a damnatory character ending in "ation," from his client's lips. "I dare say they are a little uncomfortable, my lord," he murmured conciliatingly, "just at first and until you get used to them." "Without doubt he shall perish everlastingly," exclaimed the Bishop with vehemence. "But, indeed, my lord, if you will have patience," pleaded the dentist, "in a week's

time"—“What do you mean?” inquired the prelate, turning round with an apostolic smile. “Why should I not have patience? The teeth fit me beautifully. It is the first time I have found myself able to pronounce the Athanasian Creed with distinctness for twenty years.”—*British Journal of Dental Science*.

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THE TEETH IN INHERITED SYPHILIS.—Mr. J. Hutchinson, Jr., recently showed before the Harveian Society two patients, and a number of drawings illustrative of the malformations characteristic of inherited syphilis in the teeth, and the chief points discovered by Mr. Hutchinson, Sr., were recapitulated. The fallacy of looking for characteristic signs in the temporary teeth was dwelt upon, their liability to premature necrosis and falling out being illustrated by specimens. Those teeth which in after life showed syphilitic deformity in the greatest degree were those which calcified first, and which during the year lay the nearest to the gum surface, namely, the permanent incisors and first molars. The three small projections at the cutting edge of the central incisors, seen in normal teeth, were noticed, and the wearing away or non-development of the medium one was described in connection with the formation of the semilunar notch and the narrowed cutting edge. The horizontal erosion of enamel resulting from mercurial stomatitis in infancy, and its occasional coincidence with true syphilitic malformation of the teeth, were illustrated, and stress laid on the fact that the upper central incisors were the real test teeth of inherited syphilis, though many children with the inherited disease presented perfectly normal teeth. No explanation could at present be given for the preponderance of female over male patients observed in connection with inherited syphilitic disease of the eyes and auditory system.—*British Journal of Dental Science*.

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DENTAL CARIES IN CLARINET PLAYERS.—In the *Vratch*, Nos. 30 and 31, 1887, Dr. P. Reformatsky, of Ekaterinoslav, publishes a valuable contribution to the study of professional diseases of the teeth. The author, who is surgeon to the Simferopolsky Infantry Regiment, has examined the teeth in bandsmen of his own and four other regiments. He found dental caries in about fifty per cent. of the men, but he was especially struck with the great frequency of a characteristic caries of the upper central incisors which was present in fifteen of twenty clarinet players belonging to two regiments. In playing, the mouth-piece of the instrument is pressed against the outer surface of the lower lip, which then forms a kind of soft protecting cover for the lower teeth, while the upper aspect of the mouth-piece is kept in direct contact with the upper incisors.—*British Medical Journal*.

NITROUS OXIDE DELUSIONS.—They are both ladies prominent in the most refined, religious and social circles to be found in Kentucky, and reside not a hundred miles from Stanford. One, whom we will call Mrs. A., was a modest matron, and desirous of having several teeth extracted, called upon her neighbor, Mrs. B., to accompany her to the office of the dentist and help her get her courage up. Reaching the office presently, it was found that Mrs. A.'s was at a very low ebb, and she was persuaded to try the efficacy of "laughing gas."

The dentist "had given it to scores of patients; there was not the slightest danger," and he assured Mrs. A. that she would recover from the effects of the gas in a little while and would suffer no pain whatever. With nerves wrought up to the highest tension Mrs. A. took the chair, and the dentist began to administer the gas, the effect of which was somewhat startling to him and absolutely horrifying to Mrs. B.

The patient was getting well "under the influence," when the following dialogue occurred:

Mrs. A. Is every thing ready?

Mrs. B. Yes, every thing is all right.

Mrs. A. Has the doctor come?

Mrs. B. Yes, the doctor is here.

[Here the doctor gets his nippers on a decayed molar, and after a few twists and jerks, lifts it out.]

Mrs. A. Oh, my! nobody ever suffered such pains; doctor, will it kill me?

Doctor. Oh, no, madam. It will soon be over (as he drops another tooth upon the floor.)

Mrs. A. Where is papa?

At this point Mrs. B.'s veil was drawn fourteen double over her face, and the dentist's face turned as red as a beet as he drops out the last ugly tooth and hastily sprinkles a little water in the lady's face.

In a greatly relieved voice, Mrs. A., still laboring under the delusion, asks, "Is it a boy or a girl?"—*Courier-Journal*.



A SPECIAL TO THE *Dental Luminary*, from Raleigh, N. C., says: A sensational feature has developed in the robbery of J. H. White's dental office at Elizabeth City. It was robbed, kerosene thrown on the floor and a stove overturned. The building was only partially burned. The people were greatly excited at this daring attempt at incendiarism. Detectives were put at work. A kerosene bottle was found, and also foot-prints which were clearly those of a lame man. Suspicion has centered on Dr. L. B. Dobson, a dentist, whose office is not far from that of White's. Dobson has been arrested, and part of the stolen property found in his

office concealed in an old trunk. Dobson went to Elizabeth City eight years ago from South Carolina, where he is said to have respectable connections. He is lame, and some say a recent attack of paralysis has injured his mind.

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A FAIRLY intelligent man cannot fail to pick up stray crumbs of knowledge even from watching an *average* operator; whilst the benefit to be derived from the study of the manipulations of an *expert* are incalculable. Little points of weakness, dexterity, time-saving and pain-saving expedients are minutiae which, apart from the practical principles of any particular operation, should be observed and mentally digested. This method of self-education is, of course, principally associated with clinical work; but the intercommunication of thought on professional matters is apt to be forgotten or neglected in its literary aspect, much to the detriment of ourselves and our patients. The dental world would surely be the gainer, did we but exert ourselves in following the example of our medical brethren, by adopting a fuller and franker interchange of opinion on the principles and details of our daily practice.—*Dental Review*.

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HOW OLD ARE YOU.—Girls of a marriageable age do not like to tell how old they are; but you can find out by following the subjoined instructions given by the *Chester* (Pa.) *Local News*. Let the young lady do the figuring.

Tell her to put down the number of the month in which she was born, then multiply it by 2, then to add 5, then to multiply it by 50, then to add her age, then to subtract 365, then to add 115, then tell her to tell you the amount she has left. The two figures to the right will denote her age, and the remainder the month of her birth. For example, the amount is 822; she is 22 years old, and was born in the eighth month (August). Try it.—*Items of Interest*.

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THE *Dental Review* says *The Independent Practitioner* will shortly change hands, and in all probability will be removed to New York City or Philadelphia. Dr. Barrett says, regarding this change, "No change has been made so far. There is only talk up to this time, and I do not know that it will be anything more."

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SPEAKING OF JOURNALS, I may give some news to the mass of dentists. An international journal project is in the air, conceived by Professor Sudduth, of Philadelphia. Dr. Sudduth is thought of for editor-in-chief. It is by a syndicate (that is the term now); the stock is being subscribed. I was



informed that at a meeting of May 31st the decision would be made. I enquired later of a stockholder, but he had not heard of the result. We will hear more later. There is a strong feeling that New York City ought to have a journal of its own. This stockholder emphasized this idea. There is always room for improvement.—*George A. Mills, in Western Dental Journal.*

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THE OTHER LITTLE SUFFERER FIRST.—Mr. Manhattan—That baby is making a dreadful noise, nurse.

Nurse—Yis, sor; the poor little thing's teething, and it's yurself wud cry, sor, if yez had the same pain.

Mr. M.—Can't Mrs. Manhattan—can't its mother quiet it?

N.—Perhaps she cud, sor, if she was here, but she has gone out, sor.

Mr. M.—Gone out? Where?

N.—She's gone to the dentist's, sor, to have Fido's teeth filled.—*Boston Courier.*

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BE CAREFUL YOU do not commend yourself. It is a sign that your reputation is small and sinking, if your own tongue must praise you. Let your words be few, especially when your superiors or strangers are present, lest you betray your own weakness and rob yourself of the opportunity which you might otherwise have had to gain knowledge, wisdom and experience, by hearing those whom you silenced by your impertinent talking.—*Sir Matthew Hale.*

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DR. VOISIN relates the case of a girl, eleven years of age, who was a most inveterate and persistent liar, and whom he cured completely of this reprehensible habit by means of hypnotism. Here is a grand field of usefulness opened before this young science.—*Medical Record.*

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DR. G. A. BOWMAN, of St. Louis, cuts into two parts a common hollow rubber ball, making two cups convenient for mixing small quantities of pastes, plaster or polishing material, for use at the chair or work-bench. They cannot be upset and are easily cleaned.

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DR. J. N. FARRAR, of New York, is engaged in writing a "Treatise on Corrections of Irregularities of the Teeth." The work will comprise two volumes of 600 pages each, and contain nearly 1,300 illustrations.

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FRANK ENGLMAN, a sailor, who sued Dr. David S. Skinner, a Brooklyn dentist, for breaking his jaw while extracting a tooth, has received a verdict for \$800. He sued the dentist for \$10,000.—*The Doctor.*

## DENTAL MEETINGS.

NATIONAL DENTAL ASSOCIATION.—Washington, D. C., July 24, 1888.

MISSOURI DENTAL ASSOCIATION.—Pertle Springs, July 10, 1888.

MINNESOTA DENTAL ASSOCIATION.—St. Paul, July 11, 1888.

CONNECTICUT VALLEY DENTAL SOCIETY AND MASSACHUSETTS DENTAL SOCIETY.—Boston, Mass., July 10, 1888.

GEORGIA STATE DENTAL SOCIETY.—Dalton, Ga., August 22, 1888.

AMERICAN DENTAL ASSOCIATION.—Louisville, Ky., August 28, 1888.

SOUTHERN DENTAL ASSOCIATION.—Louisville, Ky., August 28, 1888.

## THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The next meeting of the National Association of Dental Examiners will be held in Louisville, Kentucky, on Monday evening, August 27th, at eight o'clock, and at other times during the week, between the sessions of the American and Southern Dental Associations. It is important to have every State Board represented.

FRED. A. LEVY, D. D. S., *Secretary*.

## CHICAGO DENTAL SOCIETY.

At the annual meeting held on Tuesday evening, April 3, 1888, the following named persons were elected officers for the ensuing term: President, J. A. Swasey; First Vice-President, J. W. Wassall; Second Vice-President, W. B. Ames; Recording Secretary, C. N. Johnson; Corresponding Secretary, Louis Ottofy; Treasurer, E. D. Swain; Librarian, A. W. Harlan; Executive Committee, Edmund Noyes, Geo. H. Cushing, J. N. Crouse.

LOUIS OTTOFY, *Corresponding Secretary*.

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 BOOK NOTICES.

“WOMAN.” A Monthly Magazine.

A glance over the pages of the brilliant new literary enterprise, *Woman*, for July, shows how, under skillful management, that magazine has already attained to a foremost position in the periodical literature of the day. Its contributors comprise many of the leading writers of the country, its pages are embellished with engravings of the highest merit, its typography is excellent, and the heavy paper upon which it is printed imparts a sense of substantial gratification to the holder. No better publication for the entertainment of patients can be placed on the table in a dentist's reception room, and none of the metropolitan magazines, with all their varied excellences, are so cordially received by us, or find their way with such welcome greeting from the sanctum to the editorial hearthstone, as is the case each month with *Woman*, and we take constant pleasure in reiterating the professional satisfaction we expressed when we first felt the fond assurance that she had come to abide with us permanently. \$2.75 a year. *Woman* Publishing Co., New York.

POPULAR SANITARY LITERATURE.—Until recently, sanitary writings have been easily divisible into two distinct classes—one severely scientific, technical, accurate, and exhaustive, but generally unintelligible to any but specialists who had devoted much study to sanitary matters. These works are valuable to students, but they are caviare to the multitude. On the other hand the books on hygiene belonging to the popular class were generally inaccurate as to facts and absurd as to inference, and much harm has been done by the false doctrines spread by them.

The American Public Health Association, a voluntary organization, comprising in its ranks physicians, clergymen, teachers, engineers, manufacturers—in fact, intelligent men and women of all classes—has labored for years to correct the evils growing out of the old order of things, and to bring home to the people the sort of knowledge that is needed to save life and avert disease. Heartily aided by the press, the Association has done much good work at its annual meetings held in different parts of the country. Still, only a small proportion of the country could be reached in this way. Three years ago, however, a philanthropic member of the Association, Mr. Henry Lomb, of Rochester, offered prizes for essays upon certain topics of vital interest to every intelligent person having any regard to the preservation of life and health. The subjects selected and the successful competitors for the prizes are as follows: (1) Healthy Homes and Foods for the Working Classes, 62 pages, by Prof. V. C. Vaughan, of the University of Michigan; (2) The Sanitary Conditions and Necessities of School-Houses and School Life, 38 pages, by Dr. D. F. Lincoln, of Boston; (3) Disinfection and Individual Prophylaxis against Infectious Diseases, 40 pages, by Major G. M. Sternberg, Surgeon U. S. Army; and (4) The Preventable Causes of Disease, Injury and Death in American Manufactories and Workshops, and the Best Means and Appliances for Preventing and Avoiding Them, 19 pages, by Mr. George H. Ireland, of Springfield, Mass.

Although the treatment of the subjects in these essays is popular in tone, and easily understood by any one, the teaching is sound and thorough. There are no misstatements of facts and no false inferences contained in them, and while the most rigid scientific demands for accuracy are complied with, the whole matter is made clear and comprehensible to the most ordinary understanding.

Through the means furnished the Public Health Association, it is enabled to offer these valuable works at a price almost ridiculously low. They may be obtained at the book stores, or of Dr. Irving A. Watson, Secretary, Concord, N. H., at the following rates: Single copies, No. 1, 10 cents; Nos. 2, 3 and 4, 5 cents each. The entire four essays in pamphlet form, 25 cents, or in cloth binding at 50 cents or 75 cents, according to style of binding and paper.

Dr. Sternberg's Essay has been published in German, French and Flemish, and Dr. Vaughan's in German.

#### ALDEN'S MANIFOLD CYCLOPEDIA OF KNOWLEDGE AND LANGUAGE.

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Cyclopeda) is good basis for the pledge he makes to his patrons that the *Manifold* shall be inferior to no other Cyclopeda in any of the important qualities of a popular guide to knowledge. Specimen pages free, or a specimen volume may be ordered and returned if not wanted; 50 cents per volume for cloth, 65 cents for half Morocco binding; postage 10 cents extra. John B. Alden, Publisher, 393 Pearl Street, New York.

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## BOOKS RECEIVED.

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TRANSACTIONS OF THE DENTAL SOCIETY OF THE STATE OF NEW YORK. Nineteenth Annual Meeting, at Albany, 1887.

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## DENTAL PATENTS.

ISSUED FOR THE QUARTER PRECEDING THE DATE OF THIS JOURNAL.

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- 380,021—March 27, 1888.—PROCESS OF MAKING DENTAL PLATES AND BRIDGES.—Craft C. Carroll, Meadville, Pa.
- 380,080—March 27, 1888.—POCKET TOOTH BRUSH.—Adrian F. Bouton and Kent K. Stearns, Elizabeth, N. J.
- 380,433—April 3, 1888.—HAND PIECE FOR DENTAL ENGINES.—Henry S. Grace, San Francisco, Cal.
- 380,512—April 3, 1888.—ARTIFICIAL TOOTH.—John J. R. Patrick, Belleville, Ill.
- 380,700—April 10, 1888.—DENTIFRICE.—Jacob Schwartz, Portland, Oregon.
- 380,739—April 10, 1888.—TOOTH PICK.—Robert A. Bacon, New York, N. Y.
- 381,040—April 10, 1888.—DENTAL CHAIR.—Levi Stuck, Hart, Mich.
- 381,143—April 17, 1888.—DENTAL TOOL HOLDER.—Joseph A. Kimball, New York, N. Y.
- 381,196—April 17, 1888.—DENTAL DRILL.—Adelbert H. Winn, Nashville, Mich.
- 381,266—April 17, 1888.—DENTIST'S DISK HOLDER.—William B. Miller, Altoona, Pa.
- 381,364—April 17, 1888.—DENTAL PLUGGER.—Byron W. Haines, San Francisco, Cal.
- 381,783—April 24, 1888.—DENTAL ENGINE.—J. Hood and S. H. Reynolds, Boston, Massachusetts.
- 381,844—April 24, 1888.—DENTAL PLUGGER.—Preston L. Morse, Natick, Mass.
- 382,085—May 1, 1888.—DENTAL FOIL.—Thomas J. Henry, New York, N. Y.
- 382,473—May 8, 1888.—DENTAL OR OTHER CHAIR.—Henry D. Justi, Philadelphia, Pa.
- 382,539—May 8, 1888.—MODEL FOR DENTAL PLATES.—Peter J. Malone, Altoona, Pa.
- 382,609—May 8, 1888.—DENTAL ABRADING DISK.—C. W. F. Holbrook, Newark, N. J.
- 382,672—May 8, 1888.—DENTAL HAND PIECE.—Walter D. Williams, Camden, N. J.
- 382,673—May 8, 1888.—DENTAL HAND PIECE.—Walter D. Williams, Camden, N. J.
- 383,152—May 22, 1888.—PNEUMATIC DENTAL PLUGGER.—W. S. Sherman, Marinette, Wisconsin.
- 383,368—May 22, 1888.—DENTAL TOOL.—John J. R. Patrick, Belleville, Ill.
- 383,760—May 29, 1888.—ARTIFICIAL TOOTH.—John B. Parker, Grand Rapids, Mich.
- 384,183—June 5, 1888.—VULCANIZING APPARATUS.—A. B. Woodard, Hornellsville, N. Y.
- 384,509—June 12, 1888.—HEATERS FOR DENTAL FLASKS.—Rolla M. Chase, Bethel, Vt.



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“I would say you certainly have a wonderful article, and in my hands it has proven a genuine success.”—*Dr. A. H. Lee, Washington, D. C.*

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“I am pleased to say your Anæsthetic has given entire satisfaction in every case I have applied it.”—*Dr. T. H. Holden, Winnemucca, Nev.*

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“I think your obtunder the best I have ever used for the purpose set forth.”—*Dr. E. F. Wilson, Rochester, N. Y.*

“This makes the second bottle of your ‘Anæsthetic’ I have used and I am perfectly charmed with it.”—*Dr. Starr Parsons, Washington, D. C.*

“I have given your Anæsthetic a fair test and am convinced it will do all you claim for it.”—*Dr. W. W. Lazear, 2208 Wabash Avenue, Chicago, Ill.*

“I am now using the second bottle of your ‘Anæsthetic,’ which I find a convenient and useful article in my practice.”—*Dr. J. A. Kimball, 28 W. Twenty-sixth Street, New York City.*

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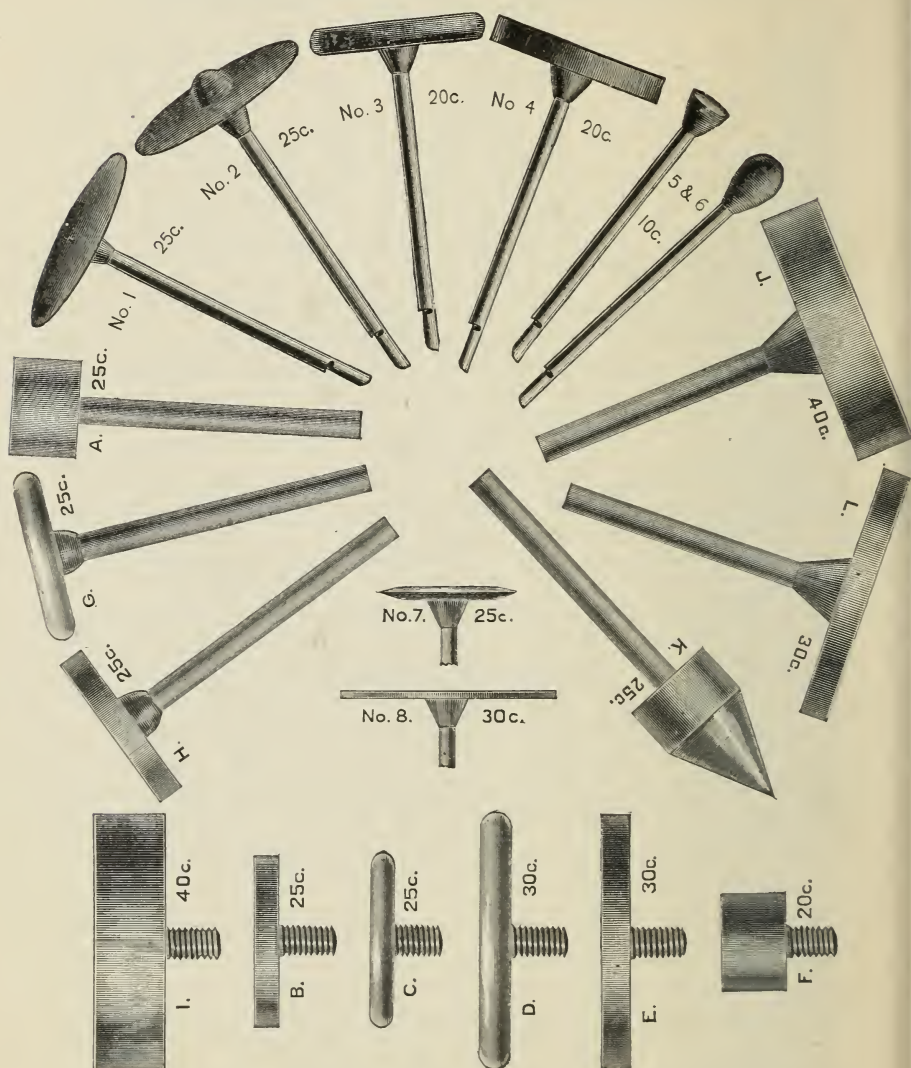
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Address, **B. S. BROWN, Hyde Park, Mass.**



Reduction . . . . .

PHILADELPHIA, June 9th, 1888.  
REDUCTION.  
On and after this date, retail price for Gas  
will be \$2.00 per 100 gallons.  
H. D. JUSTI,  
1301 & 1303 Arch Street,  
PHILADELPHIA, PA.  
BRANCH,  
66 EAST MADISON STREET,  
CHICAGO, ILL.

. . . . . Reduction

# SAMSON RUBBER

The Strongest and Most Uniform Rubber Manufactured.

TRADE MARK,  
No. 3788.



Registered  
June 20th, 1876.

## PRICE LIST OF DENTAL RUBBERS AND GUTTA PERCHA.

No. 1 Rubber, per lb.,																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</
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Adamantine Filling or Stopping.

THESE Rubbers being made from carefully selected Para Gum, and manufactured by improved processes, I can guarantee them to give entire satisfaction to the user and retain a high polish.

FOR ANY FURTHER INFORMATION, ADDRESS

**EUGENE · DOHERTY,**

110 and 112 Kent Avenue, Corner North Eighth Street,

BROOKLYN, E. D., N. Y.

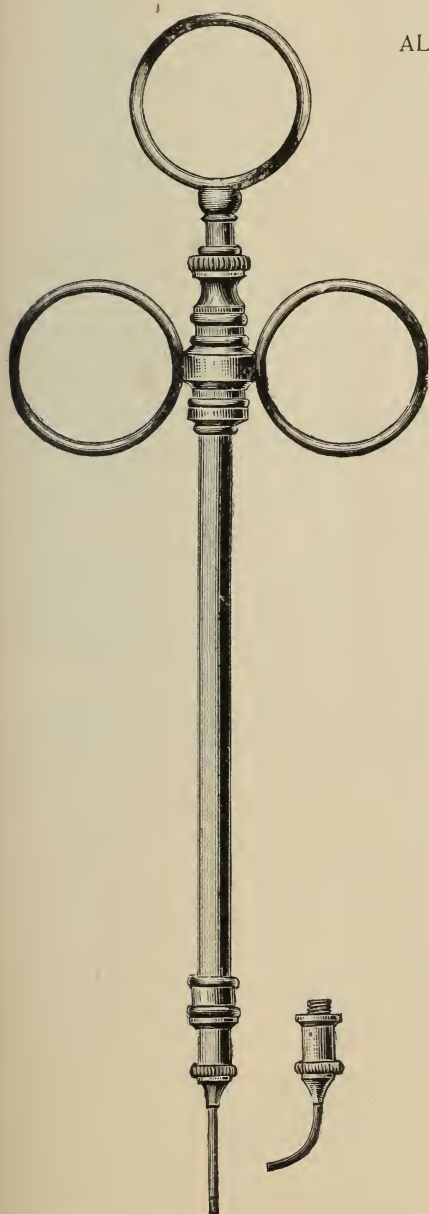
FOR SALE BY THE BUFFALO DENTAL MANUFACTURING COMPANY.

# • LEWIS • ABSCESS • SYRINGE •



FOR TREATMENT OF

ALVEOLAR ABSCESS, PYORRHOEA  
ALVEOLARIS, AND THE  
IMMEDIATE RESOLUTION OF  
PERIODONTITIS  
AND INCIPIENT ALVEOLAR  
ABSCESS.



This syringe is so constructed that it can be filled and operated with one hand. The movement of the piston is but one-quarter of an inch, thereby taking up the desired quantity of fluid and no more.

The capacity of the syringe is so small (a few drops only) that it obviates the annoyance of cauterizing the inside of the mouth when using creosote or other strong medicines.

If the opening into the tooth or pulp canal is made to fit the syringe point, the whole contents of the syringe can be discharged into the pulp canal and through the apical foramen and into the fistulous sinus, thoroughly medicating the diseased tract without allowing any of the preparation used to escape into the mouth to cause annoyance to the patient.

In the same manner a few drops of the appropriate remedy may be placed in the pocket between the root and the gum in a case of pyorrhœa alveolaris.

The small amount of fluid contained in this syringe can be pumped back and forth during its application to the tooth or gum-pocket, keeping it in active circulation and insuring its penetration to every part of the diseased tract.

This syringe is almost indispensable in the treatment of inflamed and abscessed roots by the exhibition of Peroxide of Hydrogen and Mercuric Chloride, and it is more extensively used for this purpose, perhaps, than for any other. The fact has been established, by the repeated success of this treatment, that periodontitis may be reduced in an hour or two, and alveolar abscess aborted.

Full directions accompany each syringe for its use in cases of the nature described above.

## PRICE.

Lewis Abscess Syringe, with two  
gold points, . . . . . \$3.50

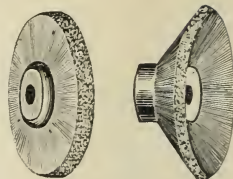
# TOOTH \* BRUSH \* WHEELS.

WITH METAL CENTER.

Endorsed by Dr. J. H. McKELLOPS,

ST. LOUIS, MO.

Made in two shapes—Straight and Concave—of Pure Hair.



PRICES: { No. 0, soft straight, . . . . . } 25 cents each.  
 { No. 1/2, stiff straight, . . . . . }  
 { No. 00, soft concave, . . . . . }  
 { No. 1/4, stiff concave, . . . . . }

BUFFALO DENTAL MANUFACTURING CO.

## BROACH \* HOLDERS!



Bone handle, German silver trimming. A very neat instrument for the purpose. A split socket and clamping nut holds the broach firmly, while it is readily removed, if desired.

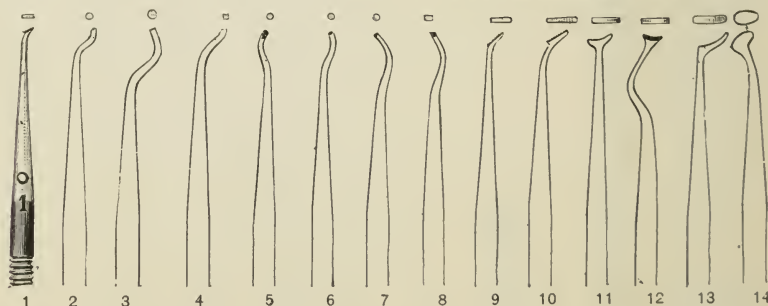
Price, only - - - 10 cents.

## SET "L"

A NEW SET OF SHORT POINTS FOR THE

Patented August 22, 1876.

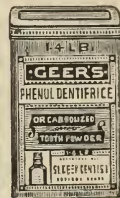
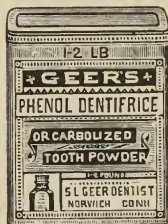
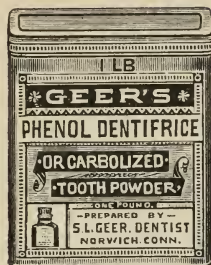
SNOW & LEWIS AUTOMATIC PLUGGER



PRICES SET "L" AUTOMATIC PLUGGER POINTS.

Nos. 1, 2, 3, 5, 6, 7, 13, 14, each, . . . . . \$0.50  
 Nos. 4, 8, 9, 10, 11, 12, each, . . . . . .75  
 Per set of 14, . . . . . 8.50  
 Snow & Lewis or Abbott Automatic Plugger Points, per doz., . . . 3.50





## Phenol \* Dentifrice

OR

### CARBOLIZED TOOTH POWDER.

To maintain the health of the **Mouth** and preserve the freshness and beauty of the **Teeth**, the frequent use of a dentifrice becomes indispensable. It is important to obtain an article free from obnoxious ingredients, the presence of which would surely cause numerous troubles, the origin of which is unsuspected.

The proprietor of Phenol Dentifrice recommends it to the notice of those not already acquainted with its long established merits. This preparation, which has been in the highest repute since its introduction in 1870, and sold to the **dental profession** throughout the **United States** by the leading **Dental Depots**, is a scientific combination of the finest materials, so united, chemically, as to insure the greatest efficiency and the best possible results upon the **MOUTH, TEETH and GUMS**.

The excellence of this Dentifrice, the formula of which originated with the proprietor, a dentist of thirty years' practice, has obtained for it the strongest recommendation of many of the professors in our **DENTAL COLLEGES**, as well as from those most noted in private dental practice.

As a **TOOTH POWDER** for General Use, by Old and Young, it stands Unrivalled.

**\$1.00 PER LB. IN 4, 1, ½ & ¼-LB. CANS**

SOLD BY BUFFALO DENTAL MANUFACTURING COMPANY,  
WHOLESALE AND RETAIL

# IF YOU WANT

FORCEPS—CORRECTLY MADE,  
EXCAVATORS—KEEN CUTTING AND WELL TEMPERED,  
PLUGGERS—ALL KINDS, FINELY SERRATED,  
AMALGAM INSTRUMENTS—EVERY KIND,  
BONWILL ENGINE PLUGGER POINTS,  
ELECTRIC Mallet PLUGGERS,  
AUTOMATIC PLUGGER POINTS PROPERLY FITTED,  
ENAMEL CHISELS THAT WILL DO THEIR WORK,  
RUBBER DAM FORCEPS AS THEY SHOULD BE,  
FOIL CARRIERS—ALL KINDS,  
ENGINE BURS—BEST QUALITY, OR  
REPAIRING CAREFULLY ATTENDED TO,

SEND TO

## LUKENS & WHITTINGTON,

**DENTAL INSTRUMENT MANUFACTURERS.**

626 RACE STREET, - - PHILADELPHIA, PA.

---

See Advertisement of Our . . . . .

## NEW • DENTAL • LATHE

THE FASTEST SELLING LATHE IN THE  
MARKET. EVERYBODY LIKES IT.

Complete, only \$11.00

---

## Low's Counter-Irritant Dental Plasters.

The application of counter-irritants to the gum, in the form of a plaster, has some advantages over the ginger or pepper bag, as the plaster can be made to adhere to the gum, and is less bulky. It will, therefore, easily retain its place, and the effect will be more prompt and certain, the action of the remedies not being interfered with by a constant wash of saliva.

It is questionable if one degree of stimulation should be expected to answer the purpose equally well for all stages of pericemental inflammation, and in order to meet the varying indications which are presented, three different plasters have been devised, as follows:

PLASTER NO. 1 is a very mild stimulant, suitable rather for warding off threatened inflammation, than for reducing it when present. It is recommended for use after filling pulpless teeth or setting artificial crowns.

PLASTER NO. 2 is a more rapid stimulant, composed of capsicum, and is applicable to all cases when it is desired to bring about resolution instead of hastening suppuration.

PLASTER NO. 3 is a Mustard Paste, and is by far the best application when suppuration is inevitable and the desire is to hasten the discharge and relieve the patient.

Each bunch of six plasters is wrapped in tin-foil to prevent deterioration by exposure to the air, making a convenient package for the patient.

They are put up in boxes containing nine dozen of either kind or assorted. Price, \$1.00 per box

Prepared by DR. F. W. LOW, Buffalo, N. Y.

BUFFALO DENTAL MFG. CO., General Wholesale Agents.

# • FLETCHER'S • AMALGAMS •

• MANUFACTURED • BY •

THOS. FLETCHER, F. C. S., WARRINGTON, ENG.



THE METALS USED IN FLETCHER'S AMALGAMS ARE REDUCED DIRECT FROM THEIR SALTS, AND ARE CHEMICALLY PURE. "COMMERCIALLY PURE" METALS ARE NEVER USED. THEY ARE THE ONLY ALLOYS WHICH ARE AND HAVE BEEN, FROM THE FIRST, TESTED IN GOT BY IN GOT FOR ALL NECESSARY PROPERTIES, AND THEIR UNIFORMITY ABSOLUTELY GUARANTEED. UNTIL THE INTRODUCTION OF THESE ALLOYS, AMALGAMS NEVER WERE TESTED FOR ANY PROPERTIES. THESE AMALGAMS ARE STRICTLY FIRST-CLASS, AND GUARANTEED AS REPRESENTED IN EVERY PARTICULAR. \* \* \* \* \*

## FLETCHER'S PLATINUM AMALGAM

PLATINUM AND GOLD ALLOY, \$4.80 PER OZ.

IS REMARKABLY FREE FROM DISCOLORATION IF FINISHED AND POLISHED. PRODUCES PLUGS ABSOLUTELY MOISTURE TIGHT. DOES NOT DISCOLOR THE TOOTH SUBSTANCE, AND MAY BE RELIED UPON AS A THOROUGHLY TRUSTWORTHY FILLING MATERIAL. REQUIRES A VERY SMALL PROPORTION OF MERCURY.



JAMES V. LEWIS,

GENERAL WHOLESALE AGENT FOR FLETCHER'S FILLING MATERIALS FOR THE UNITED STATES.

No. 15, COURT STREET,  
BUFFALO, N. Y.

## EXTRA PLASTIC AMALGAM.

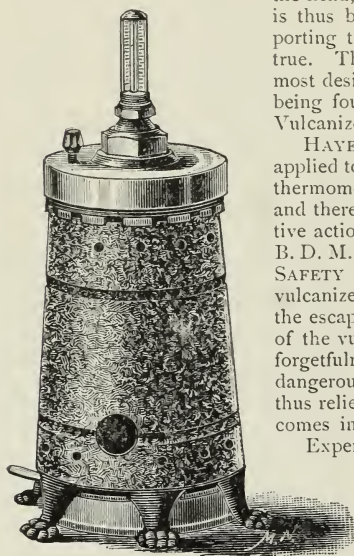
AN ADHESIVE VARIETY OF THE PLATINUM AMALGAM, \$5.00 PER OZ.

A SMOOTH, EXTREMELY PLASTIC VARIETY, DESIGNED FOR USE IN POSITIONS WHERE THOROUGH PLUGGING IS A MATTER OF DIFFICULTY. IT IS LARGELY USED IN CONNECTION WITH THE ARTIFICIAL DENTINE FOR THE APPARENTLY MOST HOPELESS CASES. FREE FROM DISCOLORATION.

FOR SALE BY BUFFALO DENTAL MANUFACTURING COMPANY.

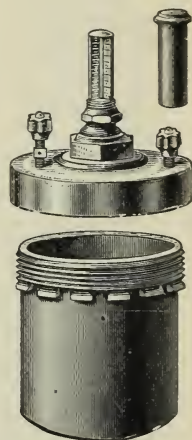
## THE WHITNEY VULCANIZER.

THE WHITNEY VULCANIZER was invented by the late Dr. B. T. Whitney more than twenty-five years ago. It consists of a copper pot, four inches in diameter, on which a brass head is screwed; a steam-tight joint being made by means of a rubber-packing in the head, which bears upon the edge of the pot. The pressure is thus brought evenly upon the parts, the screw thread supporting the pot and preventing it from being drawn out of true. This simple screw-fastening has been found to be the most desirable for dental vulcanizers, the best proof of its merits being found in the large and continued sale of the Whitney Vulcanizer.



HAYES' PATENT MERCURY BATH is applied to this vulcanizer, the bulb of the thermometer being immersed therein and thereby protected from the destructive action of the steam upon it. The B. D. M. Co.'s SAFETY APPARATUS and SAFETY DISK is also applied to this vulcanizer. This gives way and allows the escape of steam, if the temperature of the vulcanizer should be allowed, by forgetfulness or oversight, to rise to a dangerous extent. The pressure being thus relieved, a disastrous explosion becomes impossible.

Experiments have shown a variation of as much as twenty degrees in the temperature as indicated by the thermometer, depending upon the presence or absence of air in the vulcanizer: the mixture of air



and steam not allowing the heat to pass freely through it to the thermometer. A BLOW-OFF VALVE has therefore been added, by means of which the air can be expelled from the vulcanizer when it is heated, and this source of irregularity in the indications of the thermometer removed.



NO. 3, WHITNEY STRAIGHT WRENCH.



NO. 9, BED-PLATE

The Whitney Vulcanizer is closed by means of two wrenches, Nos. 3 and 8. These form the most convenient means for the purpose, for the traveling dentist. For those having a regularly appointed laboratory, the bed-plate and wrench, Nos. 9 and 10, are recommended.

The bed-plate is fixed to the bench, in which a hole is cut for the reception of the vulcanizer pot. These are furnished with the vulcanizer instead of the round and straight wrenches, Nos. 3 and 8, without any advance in price. If a hole in the bench is not practicable, the Raised Bed-plate, No. 16, which is illustrated on a succeeding page under the head of "Vulcanizer Wrenches," will be furnished at an advance in price of 75 cents.

The heat is supplied by either gas, alcohol or kerosene. Full descriptions and cuts of the different forms of heating apparatus will be found on another page.

For kerosene, a special pattern of stove is used, which is supplied at the same price as gas or alcohol heating apparatus. It has a four-inch wick and will be found an efficient heater, much preferable to those heretofore used. This stove will always be



NO. 8, WHITNEY ROUND WRENCH.



NO. 10, BED-PLATE WRENCH.



furnished with this vulcanizer, unless other heating apparatus is specified. The Union Stove, if ordered, will be furnished at an advance from the prices given below, of 50 cents for the No. 1, or \$1.00 for the No. 2 stove.

### PRICES.

No. 1 Vulcanizer, for one flask, Gas, Alcohol or Kerosene, . . . . .	\$12.00
No. 2 Vulcanizer, for two flasks, Gas, Alcohol or Kerosene, . . . . .	14.00
No. 3 Vulcanizer, for three flasks, Gas, Alcohol or Kerosene, . . . . .	16.00

## THE HAYES VULCANIZER.

THE HAYES COPPER BOILER consists of a copper pot four inches in diameter, a cover containing the packing joint, and a collar, which screws upon a threaded ring which encircles the pot, and bears upon the cover to tighten the joint by means of three set-screws, which are plainly shown in the engraving. This fastening has proved to be the most substantial of any, and can be recommended as *absolutely steam-tight*.

THE IRON CLAD BOILER is made precisely like the Copper Boiler above described, excepting that the copper pot is covered by a shell of malleable iron strong enough to withstand many times the pressure of steam used in vulcanizing. It may, therefore, be safely used, notwithstanding the weakening of the copper by corrosion. It is only made of 4 inches diameter, and for one, two, or three flasks.

The thermometer bulb is immersed in HAYES' PATENT MERCURY BATH, by which it is perfectly protected from the corrosive action of the steam.

The B. D. M. CO.'S SAFETY APPARATUS and a BLOW-OFF VALVE form part of the equipment of the Hayes Vulcanizers.

The SAFETY APPARATUS contains a thin copper disk, which will give way if the steam pressure is allowed to rise very far above the vulcanizing point. The BLOW-OFF VALVE should be opened, and the air expelled from the vulcanizer while it is heating. Experiments have demonstrated the *absolute necessity* of taking this precaution, to insure uniform indications from the thermometer.



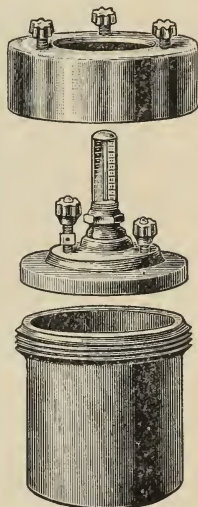
NO. 17, HAYES WRENCH

The Hayes Wrench, No. 17, here illustrated, answers for closing the Hayes Vulcanizer and also for the flasks.

Either Gas, Alcohol or Kerosene heating apparatus is furnished as required, at the same prices given below. They are illustrated on another page. A SPECIAL PATTERN OF KEROSENE STOVE is now furnished with our vulcanizers, without the advance in price heretofore made in furnishing the Union Stove. It will always be furnished with these vulcanizers unless other heating apparatus is specified. The Union Stove, if ordered, will be extra, viz.: No. 1, 50 cents; No. 2, with two wicks, \$1.00.

### PRICES.

No. 1, Copper, Gas, Alcohol or Kerosene, . . . . .	\$12.00
No. 2, Copper, Gas, Alcohol or Kerosene, . . . . .	14.00
No. 3, Copper, Gas, Alcohol or Kerosene, . . . . .	16.00
No. 1, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	13.00
No. 2, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	15.00
No. 3, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	17.00



# R. S. WILLIAMS,

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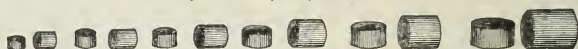
MANUFACTURER OF

STANDARD COHESIVE GOLD FOIL,  
STANDARD MEDIUM GOLD FOIL,  
STANDARD SOFT GOLD FOIL,  
STANDARD CORRUGATED GOLD FOIL,  
STANDARD CRYSTAL SURFACE GOLD (Rolled),  
STANDARD UNTRIMMED GOLD FOIL (Cohesive),  
STANDARD UNTRIMMED GOLD FOIL (Soft).

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## STANDARD • GOLD • CYLINDERS.

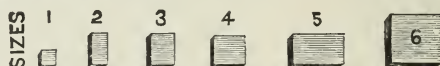
Styles A, B, and C.



NON-TIPPING GOLD CYLINDERS (Cohesive),  
NON-TIPPING GOLD CYLINDERS (Soft),  
BURNISH GOLD CYLINDERS (Cohesive),  
BURNISH GOLD CYLINDERS (Soft).

---

## RECTANGULAR • GOLD • PELLETS.



NON-TIPPING GOLD BLOCKS,  
FOLDED GOLD FOIL,  
GOLD and PLATINA, for Filling (Folds and Rolled).

---

ELECTRIC GOLD, (Cohesive)—Always Reliable.

---

STANDARD TIN FOIL and CYLINDERS,  
GOLD LIGATURE WIRE,  
AMALGAM ALLOY No. 1.

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GOLD PLATE, SOLDERS, WIRE, Etc.,  
PLATINA PLATE and WIRE (Hard and Soft,)

FOR CROWN AND BRIDGE WORK.

---

115 WEST 42<sup>d</sup> ST., NEW YORK CITY.

[ja88-1y]

# New · Specialties · in · Gold

## FOR FILLING.

---

• • • • •

### SOFT · BURNISH · GOLD · CYLINDERS.

---



Sizes,  $\frac{1}{2}$ , 1, 2, 3, and assorted.

These cylinders are made with particular reference to the new system of packing gold with engine burnishers.

They also have excellent qualities for use with Mallet or Hand Pluggers.

A prominent New York operator says: "As a soft gold they surpass anything I ever used."

### • COHESIVE · BURNISH · GOLD · CYLINDERS ·

---



Sizes,  $\frac{1}{2}$ , 1, 2, 3, and assorted.

Are similar to the above, but are *fully Cohesive*. They also have the quality of toughness, so the *plugger point carries the gold before it* instead of cutting through. It is claimed for them that they possess, in the highest degree so far known, the

MAXIMUM OF COHESION WITH THE . . . MAXIMUM OF SOFTNESS AND TOUGHNESS

---

• • • • •

It is believed these two varieties of Burnish Gold Cylinders possess such desirable and hitherto unobtained working properties, that they are well worth a trial by all first-class operators.

\$4.50 per  $\frac{1}{8}$  oz.—\$17.50 per  $\frac{1}{2}$  oz.

For Sale by  
B. D. M. CO.

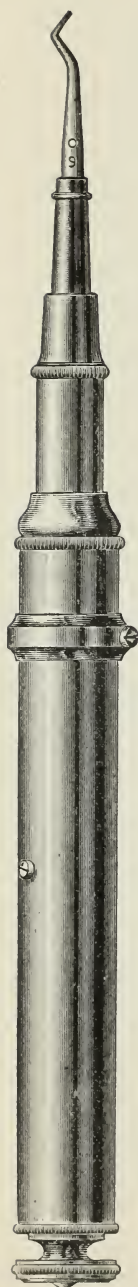
R. S. WILLIAMS, NEW YORK  
No. 115 WEST 42d STREET, CITY.

# THE SNOW & LEWIS

## AUTOMATIC · PLUGGER.

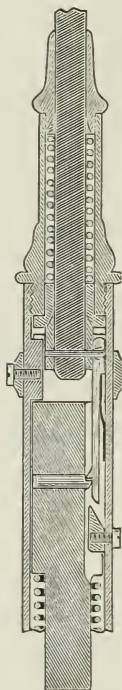
Patented October 24, 1865, October 30, November 20, 1866, June 23, 1863, and June 1, 1869.  
 Patent of October 30, 1866, re-issued August 22, 1876, February 2, 1880.

FOR TWENTY-THREE YEARS THE BEST KNOWN AND  
 MOST INDISPENSABLE ADJUNCT TO THE  
 DENTIST'S OPERATING CASE.



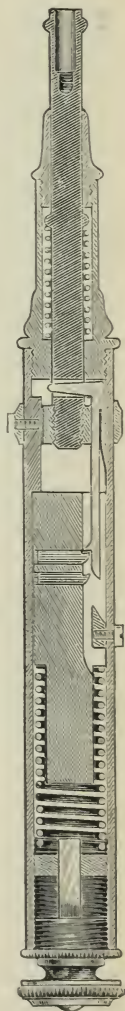
No. 2 Automatic Plugger has cone bearings and but one-eighth inch stroke.

SECTIONAL VIEW OF NO. 2 PLUGGER. [NEW STYLE.]



No. 1 Automatic Plugger can be adjusted to either one-eighth or one-quarter inch stroke.

SECTIONAL VIEW OF NO. 1 PLUGGER.



### PRICES.

Automatic Plugger, triple Gilt, Nos. 1 or 2, . . . . .	\$12.00
Automatic Plugger, Silver or Nickel-plated, . . . . .	8.00
Snow & Lewis Plugger Points, per dozen, . . . . .	3.50
Set "L" Auto. Plugger Pts., Nos. 1, 2, 3, 5, 6, 7, 13, 14, ca. . . . .	.50
Set "L" Auto. Plugger Pts., Nos. 4, 8, 9, 10, 11, 12, each, . . . . .	.75
Set "L" Auto. Plugger Pts., per set of 13, . . . . .	8.50
Morocco Case, with Point Rack, . . . . .	3 50

Points of any desired pattern furnished to order.



THE SNOW AND LEWIS

## • AUTOMATIC • PLUGGER •



This instrument has been in use since 1865, and it stands as well in favor at present as it has at any time since its introduction. It was the first successful spring plugger brought to public notice, and nothing has been offered in the market since its first appearance which compares with it for efficiency. The best proof of its excellence and the public appreciation of it is found in the constantly increasing demand for it, it having sold more largely in 1887 than in any previous year.

Its mechanism is easily understood by reference to the sectional engraving. The hammer is impelled by a spiral spring, the tension of which is altered by turning the knob at the end of the instrument. The pressure of the spring is received by a projection on the inside of the case, upon which the hammer rests. The socket-piece, or tool-holder, slides longitudinally in bearings in the smaller section of the case, and is pushed outwardly by a spiral spring. A spring-catch is connected to the inner end of the socket-piece at one end, while its free end engages with one of the catches on the hammer. An inclined plane, fastened to the inside of the casing, serves to raise the spring-catch and disengage the hammer at the proper time.

When the instrument is pressed against a resisting object, as a filling, for instance, the case slides over the socket-piece, compressing both the spiral springs; the spring-catch holding the hammer at the same relative distance from the end of the socket-piece that is shown in the cut. The spring-catch is finally disengaged by the inclined plane, and the hammer is allowed to descend upon the end of the tool-holder. When the pressure upon the instrument is released, the recoil of the tool-holder spring throws the parts into their original positions, thus gaining distance between the hammer and tool-holder for another blow.

It will be observed that there are two catches on the hammer in the full-length sectional engraving. If the socket-piece is arrested in its outward movement, so as to engage the spring-catch with the second catch on the hammer, the hammer will only fall half the distance that it would if the first catch of the hammer were engaged, and the blow will be correspondingly lighter.

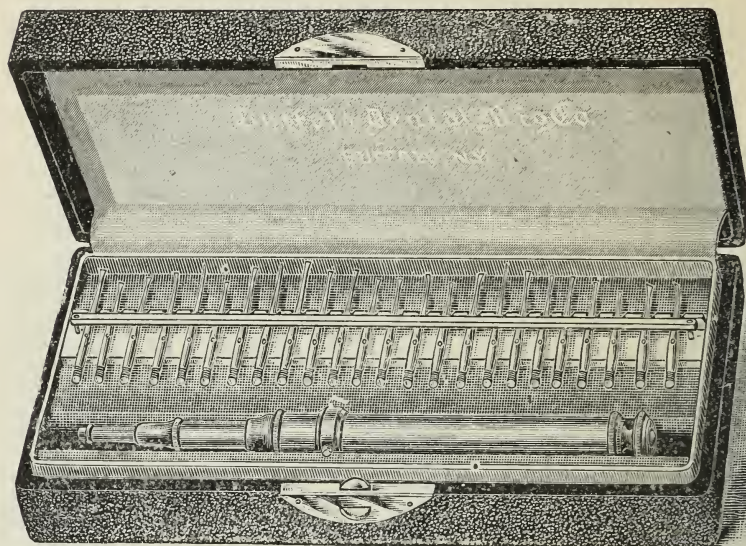
This effect is produced by turning the ring on the outside of the plugger case to the right just after a blow has been struck, and before the tool-holder has been thrown out by its spring. The screw, which is fastened in the ring, projects into the case; and when the ring is turned, it prevents the socket-piece from passing outwards to its full extent, by its coming in contact with the collar on its inner end.

The foregoing description applies to the "No. 1," or old style plugger. The "New Style" plugger, which is also shown in section, differs from the other in having two taper collars on the tool-holder, by which all lateral play between it and the bushings through which it slides, is taken up. The point of the instrument is thus steadied, and can be placed upon the filling with the same exactitude as can be an old-fashioned hand plugger..

It will be observed that the hammer has but one catch. This is because the collars on the tool-holder must always be brought against the bushings, which are countersunk for their reception, and any alteration of the length of stroke of the tool-holder is therefore inadmissible.

The following claims are made for this instrument: It is as strong and substantial as can be made, and is not likely to get out of order. The expense of repairs, if necessary, is very small. The durability is such, that the first made, over twenty years ago, are still in use. Its blow is the most effective of any instrument of its kind. In fact, the "blow of the Snow and Lewis Plugger" is often mentioned as the standard for comparison when other mallet devices are tested. The best that is ever said of them is that the blow is equal to the "Snow and Lewis." No claim is made to superiority over it.

# MOROCCO CASE for the SNOW & LEWIS AUTOMATIC PLUGGER.



NEW PATTERN OF POINT RACK.

FROM this date, January 1, 1888, the Hayes Rack will be discarded as an adjunct to the Morocco Case for the Snow & Lewis Automatic Plugger, and the Pin Rack will be substituted therefor. The Pin Rack was originally manufactured by The Buffalo Dental Manufacturing Company about twenty years ago. In its original form it was objectionable from the ease with which the points were dislodged from the pins. This difficulty is now obviated by the use of a retaining bar, which presses upon the points, rendering their accidental displacement impossible. As the bar is held down by light springs, it is easily raised when it is desired to remove a point from the rack, or to return one.

The new Morocco Case will be of the same dimensions as the former one, but will hold twenty-four points instead of eighteen.

## PRICES.

Snow & Lewis Automatic Plugger, Silver or Nickel Plated, with Morocco Case and 24 Plugger points, . . . . .	\$15.50
Morocco Case, with rack to hold 24 points, . . . . .	3.50

## STEAM GAUGES FOR VULCANIZERS.



We have a small, neatly made Steam Gauge, as well made and reliable as any steam gauge, having pressure and temperature both indicated upon the dial. The case is three inches diameter.

PRICE—Each, with coil pipe for connection, \$5.00.

BUFFALO DENTAL MFG. CO.

## Endless Vulcanizer Packing.

There has been some demand for an endless packing for the Whitney Vulcanizer; and we have at last succeeded in obtaining some, equal in quality and similar in structure to the packing strips commonly used.

There are rubber rings sold as endless packing, which are wholly unsuitable for the purpose. These can be relied upon as a good article. Price, 8 cents each.

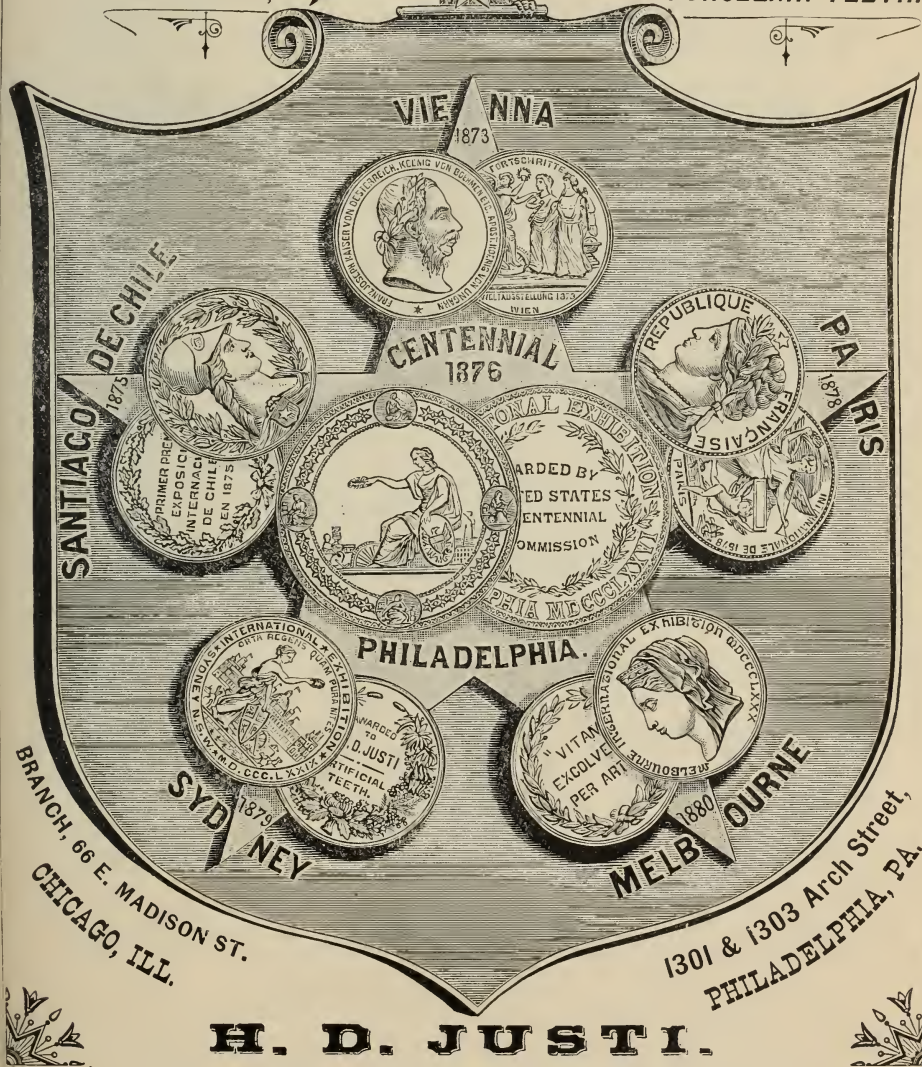


# SIX WORLD'S FAIR MEDALS

—OF THE—  
HIGHEST ORDER OF MERIT AWARDED FOR SUPERIORITY

—AT—  
VIENNA, CHILI,  
PHILADELPHIA,  
PARIS, SYDNEY,  
AND  
MELBOURNE,

—TO—  
**H. D. JUSTI,**  
IN COMPETITION  
WITH THE BEST MAKERS  
—OF—  
**PORCELAIN TEETH.**



BRANCH, 66 E. MADISON ST.  
CHICAGO, ILL.

1301 & 1303 Arch Street,  
PHILADELPHIA, PA.

**H. D. JUSTI.**

# ✦ • JUSTI • • • • • SUPERIOR GOLD • AND • PLATINA • • • • • ALLOY • ✦



IN offering this Alloy to the profession, I can say that it will do all that is claimed for it. It has been largely used by first-class operators and experts who have **thoroughly tested** its **SUPERIOR QUALITIES**, and I have no hesitation in pronouncing it the **best combination of metals extant**, being carefully prepared after long tests and careful experiments; and the fineness of its grain, which makes it so **dense** after being mixed, is greatly due to the **crystallization** of the metals in the **process of its manufacture**.

Its main points are:—**SETS VERY QUICKLY** and can be **finished shortly** after its insertion; has good **EDGE**-strength, good **BRIGHT** color, and is **NON-SHRINKABLE**.

PRICE:—1 ounce, \$3.00; 2 ounces, \$5.50; 4 ounces, \$10.00

• • • • • H. D. JUSTI, • • • • •

BRANCH: 69 East Madison St., CHICAGO, ILL. 1301 & 1303 Arch St., PHILADELPHIA, PA.



# Pause, Read, and Act

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THE truth of the old but trite adage, "The proof of the pudding is in the eating," was never more fully exemplified than by using

## Gideon Sibley's Artificial Teeth,

and carefully noting results.

They need only to be seen to be admired for their beauty and surprisingly truthful imitation of Nature's Ivories, and their use confirms all that is claimed for them as regards superiority in all the essentials that, combined, make the most perfect teeth, both for the practitioner and the patron.

In manufacturing, only the best of materials and the most skillful workmen are utilized ; consequently the cost of production equals that of the highest priced teeth on the market.

## • • • Economy is Wealth • • •


Why pay two dollars for one dollar's worth of goods, quality being equal? Many dentists who are daily using SIBLEY'S TEETH practically answer this question.

### SAMPLE CARDS AND ABRIDGED PRICE LIST Sent Free of Charge.

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DON'T TAKE OUR WORD FOR IT, but test these teeth, as others have done, alternating with best makes known to you, and keep a record of breakage, and you will be surprised at the result. . . . .

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OBSERVE THIS TRADE  MARK ON GUM SECTIONS.

FOR SALE BY ALL FIRST-CLASS DEALERS.

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# GIDEON SIBLEY,

13th and Filbert Streets, PHILADELPHIA, Pa.

# KING'S OCCIDENTAL AMALGAM.

PRICE REDUCED TO \$3.00 PER OZ.

This Amalgam has been before the profession in Ohio and Western Pennsylvania for some years, and all who have used or tested it agree that it has merits over any other Amalgam in the market.

The process of manufacture differs from that of other Amalgams, and

## BY A NEW INVENTION

Dr. King is enabled to obtain better results, both in regard to COLOR, SHRINKAGE, and EXPANSION, than is obtained in any other alloy in the market.

Test for color consists of sixty grains of Sulphuret of Potassa, dissolved in one ounce of water. Amalgam plugs to be left in this solution twenty-four hours or more. The Occidental will remain bright after this test, and we know of no other Amalgam, at even double the price, but that will discolor. All who would use the best should buy

## KING'S OCCIDENTAL AMALGAM.

---

### TESTIMONIALS.

I believe the Occidental Amalgam has *no equal* in the market to-day.

PITTSBURGH, September 22, 1881.

GALE FRENCH, D. D. S.

I think the Occidental Amalgam superior to any I have ever used.

PITTSBURGH, September 22, 1881.

J. G. TEMPLETON, D. D. S.

ASK YOUR DENTAL DEPOT FOR IT, OR SEND TO

**RANSOM & RANDOLPH, Wholesale Agents,  
83 JEFFERSON STREET, TOLEDO, OHIO.**

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

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Give us your Subscription now for 1888.

## OHIO JOURNAL OF DENTAL SCIENCE.

*A Monthly Journal of 48 to 56 pages, for Two Dollars per Year.*

THE '88 VOLUME WILL BE FILLED WITH MATERIAL FROM THE PENS OF THE BEST MEN IN THE PROFESSION, COMPRISING ARTICLES BOTH PRACTICAL AND SCIENTIFIC. THE JANUARY NUMBER WILL CONTAIN AN EXCELLENT PORTRAIT OF THE VENERABLE EDITOR AND BIOGRAPHICAL SKETCH BY PROFESSOR J. TAFT.

Editor: GEO. WATT, M. D., D. D. S., Xenia, Ohio.

PUBLISHED BY  
**RANSOM & RANDOLPH,  
TOLEDO, OHIO,**

[ja88-1y]

Subscriptions received by BUFFALO DENTAL MANUFACTURING CO.

# CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.

• • • • •

<b>GRAY.</b>	<b>YELLOW.</b>	<b>LIQUID.</b>	<b>MEDIUM.</b>	<b>LIGHT.</b>
FOUR COLORS and LIQUID.—Gray, Yellow, Medium and Light, . . \$2.00 per package. TWO COLORS and LIQUID.—Gray and Yellow, . . . . . 1.50 “ “ ONE COLOR and LIQUID.—Gray, Yellow, Medium, Light or Gum, 1.00 “ “				

**THIS COMPOUND STANDS WITHOUT A RIVAL.** Used for TEN years by Leading Dentists throughout the world.

**DIAMOND CEMENT** should not be classed with the so-called oxy-phosphates, as is often the case—the materials of which it is composed and its process of manufacture being entirely different—hence its **Superiority**.

IT HARDENS IN WATER OR SALIVA.—Two or more colors blended together (in mixing) will produce any shade desired.

## • • CAULK'S • PAR • EXCELLENCE • ALLOY • •

This Gold and Platina Alloy is manufactured on a new principle. Saves teeth where others fail. It is the result of a long series of experiments, and has been in constant use for TEN years. By our NEW METHOD of manufacture there is no GUESS WORK, the molecular change is controlled, making each and every ingot always and absolutely alike in its properties.

**PRICE**, in 1-3, 1-2 and 1 oz. packages, per oz., \$3.00; 2 oz., \$5.00.

## • • CAULK'S • WHITE • ALLOY • •

Has been greatly improved. There is nothing equal or superior to it. Is of a peculiar grayish-white color. When properly manipulated with our Purified Mercury it will retain its color under all circumstances.

**PRICE**, in 1-4, 1-2 and 1 oz. packages, per oz., \$4.00; 2 oz., \$7.00.

## CAULK'S • DIAMOND • POINT • STOPPING • and • GUTTA-PERCHA • • POINTS • FOR • FILLING • ROOTS • •

**PRICE**, in 1-8, 1-4, 1-2 and 1 oz. packages, per oz., (reduced to) \$2.00.

All of Caulk's Filling Materials are sold by Troy Weight and sent by Mail.

**OVER FIFTEEN THOUSAND** Dentists are using these materials throughout the world. What better evidence do you wish of their Superiority and Excellence.

**Orders for DENTAL SUPPLIES** will receive prompt attention.

**L. D. CAULK**, Manufacturer,  
Laboratory, - - - - CAMDEN, Delaware.

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

# NOTICE

ANY SUBSCRIBER,

Either New or Old, who sends us \$3.75, Cash, will get

## THE DENTAL REGISTER

FOR THE YEAR 1888,

— AND IN ADDITION A COPY OF —

DR. STOWELL'S

**Atlas of the Microscopic Anatomy of the Human Teeth.**

CONTAINING 64 CUTS,

REPRESENTING EVERY TISSUE OF THE TEETH. UNDER HIGH MAGNIFICATION, SOME OF THESE ARE AS HIGH AS ONE THOUSAND DIAMETERS, AND ARE SO PLAIN THAT ANYONE CAN UNDERSTAND PERFECTLY ALL THESE STRUCTURES WITHOUT THE AID OF A MICROSCOPE.

Dr. Stowell's reputation is sufficient to give all the recommendation necessary as to the accuracy of the work ; to say it is absolutely perfect is no exaggeration.

The work shows in beautiful form ( in addition to Dr. Stowell's work ) a number of abnormal teeth from Dr. J. Taft's collection. It is printed on the best of paper and bound in morocco.

The atlas is in the form of a portfolio, measuring 12x16 inches ; some of the anatomical cuts measuring thirteen inches in length. Each cut accompanied with ample description.

SEND YOUR SUBSCRIPTION FOR THE  
"REGISTER" AND YOU WILL RECEIVE  
IN ADDITION TO THE "REGISTER" A  
COPY OF THIS SUPERB WORK. - - -

**SAMUEL A. CROCKER & CO.,**  
OHIO·DENTAL·AND·SURGICAL·DEPOT,

117, 119 and 121 WEST FIFTH ST., CINCINNATI, Ohio.



# SOLID GOLD CUSPS FOR CROWN AND BRIDGE-WORK.

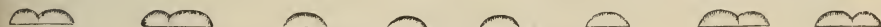
RIGHT.

UPPER.

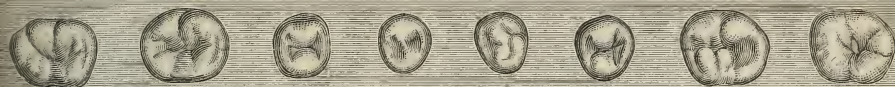
LEFT.



1 \$3.50. 2 \$3.50. 3 \$2.50. 4 \$2.00. 5 \$2.00. 6 \$2.00. 7 \$3.50. 8 \$3.50.



THICKNESS OF THE GOLD CUSPS.



16 \$3.00. 15 \$3.50. 14 \$2.00. 13 \$2.00. 12 \$2.00. 11 \$2.00. 10 \$3.50. 9 \$3.00.

LEFT.

LOWER.

RIGHT.

These solid Cusps are made of 22-carat gold, and are designed to be soldered to seamless or other gold bands fitted to the natural tooth-roots in the mouth. The cusps are also intended to form the masticating surfaces of porcelain crowns in bridge-work.

## A NEW ANESTHETIC MANUAL.

# • NITROUS • OXIDE •

Its Properties, Method of Administration, and Effects.

By S. H. GUILFORD, A.M., D.D.S.,

Professor of Operative and Prosthetic Dentistry at the Philadelphia Dental College.

Sent by mail on receipt of price.

Price, . . . . . \$1.00

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# • DENTAL • METALLURGY •

By CHAS. J. ESSIG, M.D., D.D.S.,

Professor of Mechanical Dentistry and Metallurgy in the University of Pennsylvania, Dental Department.

**SECOND EDITION. REVISED AND ENLARGED.**

The new edition of this popular work is now ready for delivery. The volume has been revised carefully and brought down to the latest developments in the department of which it treats.

Price, . . . . . \$1.75

Sent by mail on receipt of price.

• THE S. S. WHITE DENTAL MFG. CO., PHILADELPHIA, NEW YORK, BOSTON, CHICAGO, BROOKLYN.

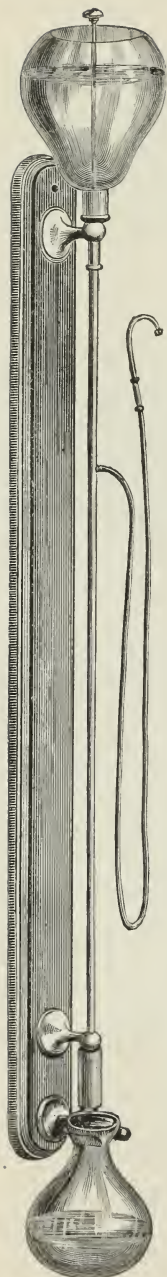
# SNOW'S SALIVA EJECTOR.

PATENTED MARCH 18, 1879.

"WALL" AND "STANDARD" STYLES.

CLEANLY, EFFICIENT, NOISELESS IN ACTION.

CAN BE USED WITHOUT A WATER SUPPLY.



"WALL STYLE."

This apparatus has now been in use for over ten years, and its merits are such that it ranks among the necessities of the operating room when running water is inaccessible. It has received the compliment of adoption, having been re-invented and brought out in England, where it is extensively known and used, without any change in shape or mechanism, under the name of the Roger Saliva Ejector; a Mr. Claude Roger posing as its putative inventor.

It is made in two forms: the "Wall" or old style, which is suspended on the wall near the operating chair; and the "Standard," which is supported by a base of cast iron which covers the receiving vessel, and which is portable. The operating parts of both are the same. The "Standard" Ejector can be set near the patient when in use, and moved out of the way at other times, and thus operates with a shorter rubber tubing for connection, and, if anything, more freely than the other.

The following points of excellence are claimed for this instrument:

It is effective, simple, and not liable to get out of order; it is noiseless in action. It operates automatically when once set in operation, and consumes so small a quantity of water that it can be used in any office without connection with a water-supply. The reservoir at the top of the apparatus, holding about a quart of water, will be found of sufficient capacity for even protracted operations.

The water passes by drops, into a peculiar arrangement in the upright tube, operating upon the principle of the syphon; and so produces a partial exhaustion of the air in the tube. The mouthpiece being connected thereto, the saliva is drawn from the mouth, and, on reaching the tube, it falls to its lower end, and passes out through the cup there attached, and through an over-flow pipe into the lower reservoir. If a partial stoppage should occur in the mouth-piece or its connecting tube, by reason of the viscosity of the saliva, water will be drawn into the upright tube from the cup at its foot until the weight of the column of water, so raised, is sufficient to overcome the obstruction.

Mouth-pieces are furnished, of either metal or glass. The glass ones are inexpensive, enabling the dentist to provide a separate one for each patient, if he chooses.

The Rollins Exhaust Bottle, suggested by Dr. W. H. Rollins, of Boston, Mass., is a very valuable addition to the Saliva Ejector. This is shown in the illustration as connected with the Standard Ejector, but it is equally applicable to the Wall pattern. The bottle is placed under the chair, the ejector exhausting the air therefrom, and the saliva descends directly into the bottle, where it remains; the air passing over with it being drawn into and expelled from the ejector.

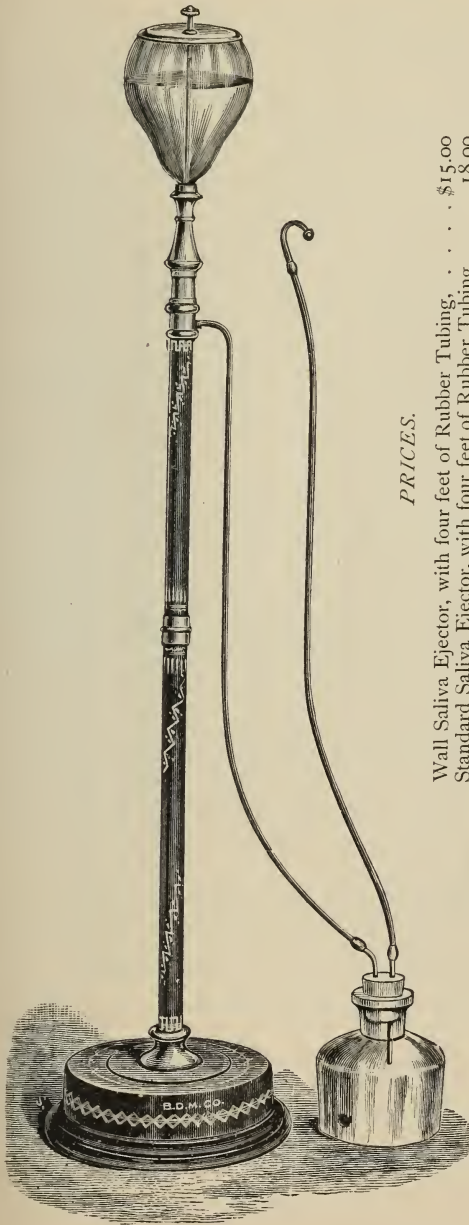
This addition enables the ejector to operate with greater freedom, and with less water than is required when the exhaust bottle is not used. It is also possible to use the same water repeatedly, as it is not contaminated with saliva, and the ejector can be placed in any convenient place, a long connection being in this case admissible; a matter of great convenience in many operating rooms.

Price-list on opposite page.

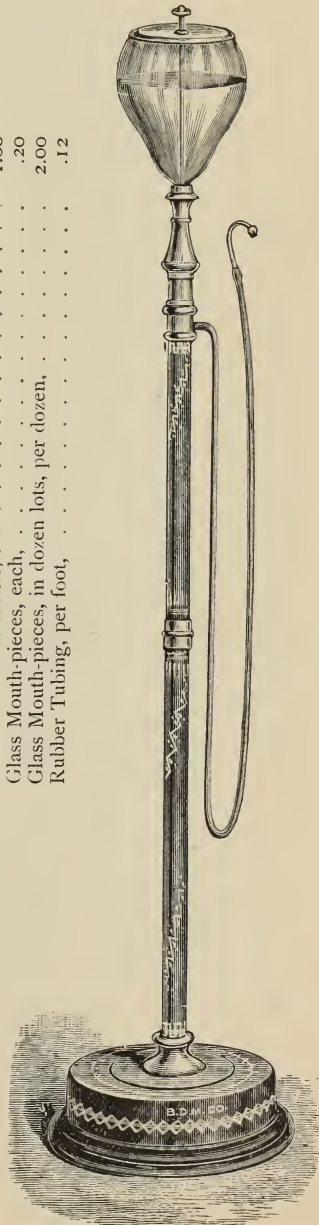
# SNOW'S SALIVA EJECTOR.

## PRICES.

Wall Saliva Ejector, with four feet of Rubber Tubing, . . . . .	\$15.00
Standard Saliva Ejector, with four feet of Rubber Tubing, . . . . .	18.00
Rollins' Exhaust Bottle, . . . . .	1.00
Glass Mouth-pieces, each, . . . . .	.20
Glass Mouth-pieces, in dozen lots, per dozen, . . . . .	2.00
Rubber Tubing, per foot, . . . . .	.12



"STANDARD" STYLE, WITH THE ROLLINS EXHAUST BOTTLE.



"STANDARD STYLE."

# GAS COOKING APPARATUS AND GAS OVENS.

---

In addition to the manufacture of Dental Goods and Chemical Laboratory Apparatus, the Buffalo Dental Manufacturing Co. have for some years been engaged in the manufacture of

## GAS COOKING APPARATUS FOR HOUSEHOLD PURPOSES.

These stoves and burners are having an extensive sale, owing to their excellence and almost world-wide reputation, and are the only make of stoves that have proved satisfactory to users of Gasoline Gas, produced by "gas machines."

No one who has never used a perfect gas oven can appreciate the comfort of a cool kitchen by dispensing with the range. Dentists who intend substituting gas for coal during the hot months should send for a complete "Household List."

We manufacture a great variety of burners for nearly all purposes and trades.

BUFFALO DENTAL MANUFACTURING CO.

---

## THREE NEW CATALOGUES.

---

THE B. D. M. CO.'S CATALOGUE OF  
DENTISTS' SPECIALTIES.

THE B. D. M. CO.'S CATALOGUE OF  
CHEMICAL LABORATORY APPARATUS.

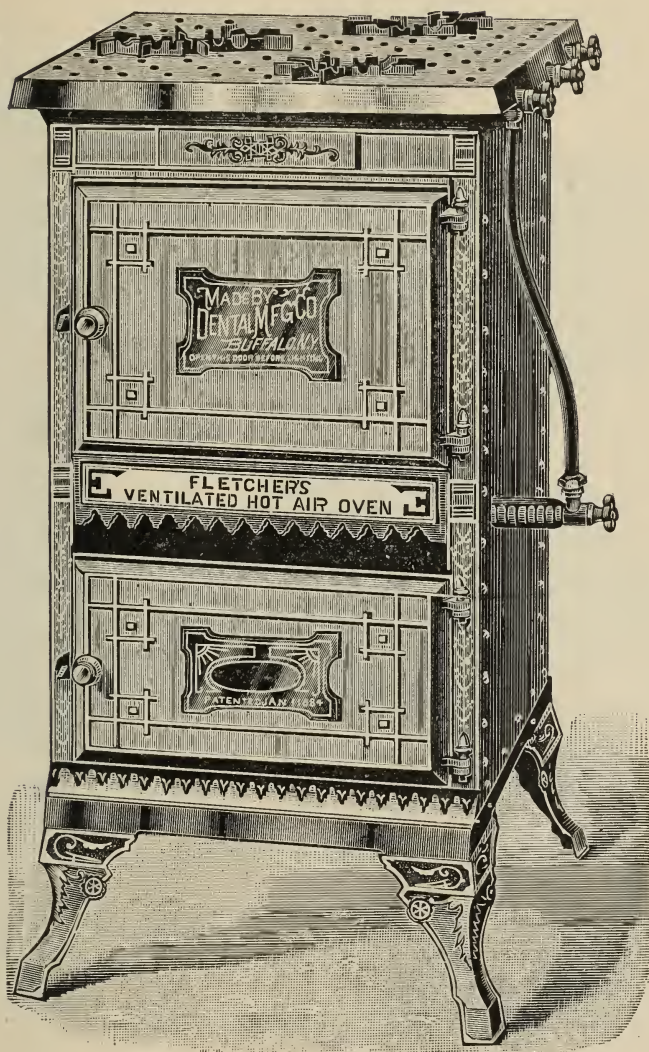
THE B. D. M. CO.'S CATALOGUE OF  
GAS COOKING APPARATUS.

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SENT FREE, ON APPLICATION, TO ANY ADDRESS.



# Ventilated · Gas · Ovens.



## B. D. M. CO'S GAS OVEN No. 72.

MEDIUM AND LARGE SIZES.

No. 72. B. D. M. CO'S GAS OVEN.—WITH FLETCHER'S PATENT RADIAL BURNERS, WITH BOILING BURNERS ON TOP, ORNAMENTED CAST-IRON FRONT AND DOORS, WITH NICKEL-PLATED PANELS.—NEW DESIGN HOT PLATE.

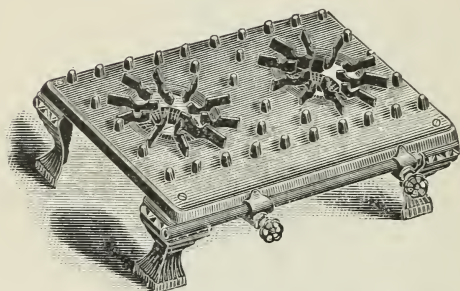
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CATALOGUES OF THE ABOVE ON APPLICATION.

# Hot Plates for Boiling and Cooking.

INDEPENDENTLY OF GAS OVENS.

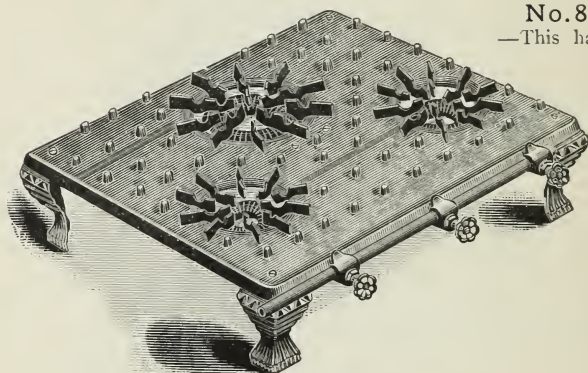
Patented Jan. 1, 1884; May 8, 1888.



## No. 80. HOT PLATE.

—With two Radial Burners,  $3\frac{3}{4}$  inches diameter. Capacity, 9 or 10 feet per hour. The pins and the spider rings over the burners are the same height, giving a level surface for sustaining the vessel to be heated.

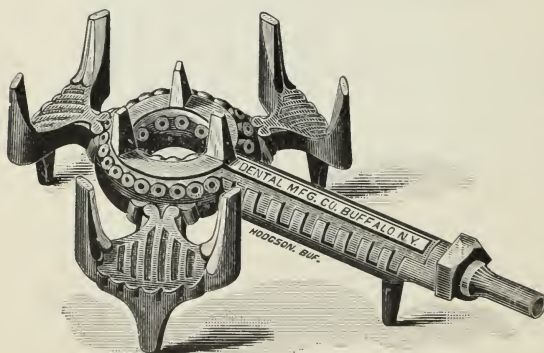
Size of top plate  $11\frac{1}{2}$  by  $18\frac{3}{4}$  inches; distance between centers of burners, 10 inches.



## No. 81. HOT PLATE.

—This has two Radial Burners  $3\frac{3}{4}$  inches diameter, and one 5 inches diameter. Capacity 10 and 15 feet per hour, respectively. This, like the No. 80, presents a level surface, upon which the vessel to be heated is sustained.

Size of top plate  $19\frac{1}{2}$  by  $22\frac{1}{2}$  inches; distance between centers of burners, 10 inches.



No. 8s.—A new simple and cheap pattern of drilled burner. In one casting. It will boil a pint of water in five minutes. This will be found an excellent burner for household use, and fully as effective as many sold at a much higher price.

PRICE—No. 8s, . 80c.

No. 9s.—A larger size of the No. 8s, identical with it in construction but having about one-half more power.

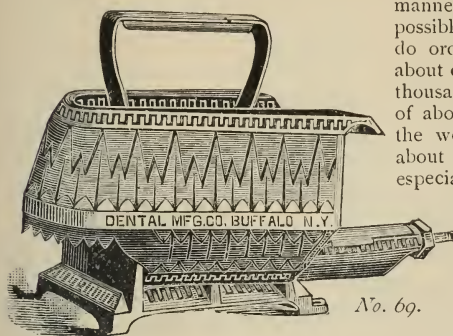
PRICE—No. 9s, . \$1.00

CATALOGUES OF ABOVE ON APPLICATION.



## No. 69. THE ARGAND SMOOTHING-IRON HEATER.

—This burner consists of a series of argand flames, which give a very intense heat, owing to the quickness with which they are penetrated by the air. Experience shows it to be one of the best smoothing-iron heaters made, being strong and not easily damaged, and very economical in gas consumption. It is constructed wholly of cast-iron, and in such a

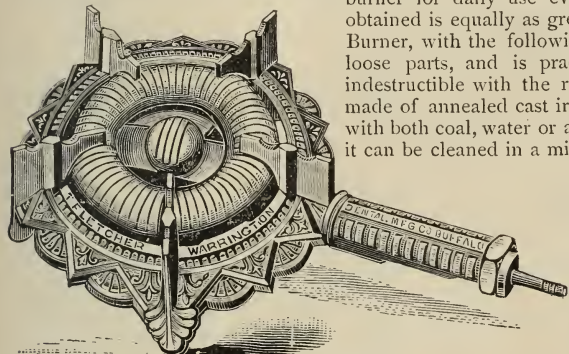


No. 69.

manner that the heat is prevented as far as possible from being carried to the table. It will do ordinary laundry work at an expense of about one cent per hour, with gas at \$2.00 per thousand feet. It will heat an iron at the rate of about two pounds per minute, according to the weight of the iron. Gas consumption, about 10 feet per hour. A larger size is made especially for Tailors' Irons. Gas consumption, about fifteen feet per hour.

Gas is rapidly coming into use as a means of heating Tailors', Hatters', Dressmakers' and Laundry Irons in summer. It saves the time necessarily wasted in building fires, and enables the user to be always ready for work at the shortest notice.

**FLETCHER'S RADIAL BURNER.**—This burner, the result of many years' costly experimenting, is an improvement on the well-known FLETCHER'S PATENT SOLID FLAME BURNER, and is acknowledged by experts to be the most perfect burner for daily use ever constructed. The duty obtained is equally as great as with the Solid Flame Burner, with the following advantages: It has no loose parts, and is practically undamageable and indestructible with the roughest use. It is entirely made of annealed cast iron, and works equally well with both coal, water or air gas. If choked with dirt, it can be cleaned in a minute with a card or knife.

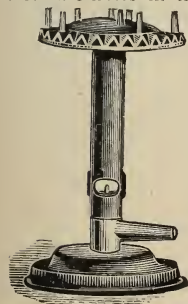


Patented Jan. 1, 1884.

The flames are practically solid when in use, and are without any tendency to run to a point in the centre; the carbonic oxide flame is unusually short.

Maximum gas consumption of No. 1 R, 12 ft. per hour; No. 2 R, 18 ft. per hour. The No. 2 R is for vessels and pans from 10 to 18 inches in diameter.

**No. 53. STAR BURNER.**—The short flames which issue laterally from the holes in the edge of the head of this burner ascend but a short distance, and it is therefore suitable for uses where direct contact of the flame with the object to be heated is not desired. It should be used for heating water, etc., in vessels with concave bottoms, or those which present obstructions to the free escape of the products of combustion.



NO. 54. ON STAND.

The notched edge of the burner-head sheds water without allowing it to extinguish the flame, which is not likely to be put out by the boiling over of anything heated upon them.

These burners are made in two sizes, A and B, 3 inches and 3½ inches in diameter, burning 8 and 12 feet of gas per hour, respectively. Furnished to be screwed on to a ½ gas pipe as a permanent fixture, No. 53, or on a stand, for use with a rubber tubing connection, No. 54.



NO. 53.

CATALOGUES OF ABOVE ON APPLICATION.

# BROWN'S Mounted Granite Wheels AND DISKS.

The Wheels A, G, H, J, K, L, will fit the Niagara Lathe Head, as made by the B. D. M. Co. If used with the split chuck (price, 10 cents,) they will fit the B. D. M. Co.'s Lathe Head.

By means of chuck No. 8 (price, \$1.50,) Brown's Disks and Points, Nos. 1, 2, 3, 4, 5 and 6, can also be used in the B. D. M. Co.'s Lathe Head, as can all instruments made for No. 4 Engine Hand Piece.

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The material of which this Rubber is composed is prepared by a new process, which insures

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PRICE, \$3.00 PER POUND.

For Sale by BUFFALO DENTAL MFG. CO.

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### Re-Distilled.

The purer the Mercury used in preparing amalgam, the greater the assurance of a successful operation.

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Re-Distilled • Mercury

IS AS PURE AS CAN BE  
PROCURED.

PRICE PER BOTTLE, . . . 40 CENTS.

THE TRADE SUPPLIED.

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# THE DENTAL ADVERTISER.

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VOL. XIX.—BUFFALO, N. Y., OCTOBER, 1888.—No. 4.

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## DENTISTS' LEGAL LIABILITIES.

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BY W. L. DRUMMOND, D. D. S., N. Y. C. D., NEW YORK, N. Y.

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FRANK ENGELMAN, a sailor, who sued Dr. David S. Skinner, a Brooklyn dentist, for breaking his jaw while extracting a tooth, has received a verdict for \$800. He sued the dentist for \$10,000.—*The Doctor*.—*Dental Advertiser*, July, 1888.

The reading of the above paragraph would lead some to suppose that the sailor Engelman got \$800 in cash, that it was a just verdict against Dr. Skinner. As the DENTAL ADVERTISER has published so much of it, perhaps its readers would like the addenda.

The plaintiff in this case alleged: 1st, that Dr. Skinner had performed the operation, and this trial took place in November, 1887, in Circuit Court of Kings County, Cullen, Judge. Upon seeing Dr. Skinner in court he was permitted to amend his complaint and a juror withdrawn. In the amended complaint he said it was in Dr. Skinner's office, *i. e.*, Dr. Skinner's assistant, and the trial continued, which was reported in the *Brooklyn Times*, 21st March, 1888. Dr. Skinner's defence was that neither he nor his assistant ever performed an operation on the plaintiff, and that the plaintiff was never in his office, and it would seem strange that the jurors could have made the mistake they did, in believing the plaintiff's uncorroborated testimony as against two very reputable gentlemen. The man was a stranger in Brooklyn, and wandered along the street and went into a dental office and had something done. Now, whether the subsequent trouble the plaintiff had was the result of a fracture or some antecedent cause is very obscure. The man followed the sea, and might have been injured some years before, either from a fall or blow on the inferior maxillary bone so as to cause necrosis, or he might have been a syphilitic.

However, the Court intended to dismiss the complaint, and upon the motion of the defence so to do intimated that he would prefer the jury to do so, as it would the more fully vindicate the dentist. But much to everybody's surprise the plaintiff got a verdict, which verdict was promptly set aside by the Court. The verdict was commented upon by the Brooklyn *Daily Times*, March 23, 1888, the editorial reading, "A verdict that ought to be set aside."

As persons or patients who feel that they have a grievance against a medical man, might be encouraged from reading the paragraph quoted from *The Doctor*, the publication of these facts, on the other hand, may lead to the discouragement of lawsuits against medical men. Patients are often heard to say, when they have been disappointed with a doctor, they have a great mind to sue him.

Suits for injuries have become, of late years, very frequent, and the desire that some classes of people have for injury suits amounts almost to a mania, and many lawyers are called "injury lawyers"—who take cases "on spec." or, as they call it, "for a strike." The hesitancy of professionals to fight such a suit is well known, and the lawyer usually frightens a defendant into a settlement. No doctor cares to face a jury, and after the Skinner verdict he may well have apprehensions.

As many dental readers may not know their peril, I will say a few words as to the law: The patient who has been urged to commence an injury suit against a dentist will tell his story to a lawyer who will immediately serve summons and complaint, in which the defendant has twenty days to file an answer. The dentist reads that some nine or ten months ago the complainant had a tooth extracted by him, and at such a time his jaw was broken or injured. The first thing perhaps he says, "I don't know the man, I never broke a jaw," etc., and without seeing his own lawyer goes straightway to the office of the plaintiff's attorney, who is really only on a pumping scheme, and in his indignation of cursing and damning gives away his case, or the cunning attorney finds out just about what his status is for a "strike." No help for him; he must either settle or fight. Now the law is very curious and very unjust to practitioners. An oral examination can be allowed by the Court, in case the plaintiff refuses to submit himself. The plaintiff will not show himself, nor can you obtain an order to examine him before trial; and you cannot even find the place of residence of the complainant—both he and his condition are kept hid until the day of the trial. *Roberts vs. O. & L. C.*; *Neuman vs. Third Avenue R. R.*, 50 Sup. Ct., 412, are the leading cases. It will be seen, however, that the Court misunderstood the two cases that it considered. If this law could be amended so that no complaint could be served unless accompanied by the sworn affidavit of the physician who attended the case, and one who had just examined

the case, there would be some justice in it, and when a doctor knew beforehand what he had to face he could fairly elect which he would do—settle or fight. But now, as the matter stands, you can know nothing until the day of the trial, and you may call on a witness who is not an expert in the case.

Let me instance a case: A Polish Jew had some trouble with his teeth, and, like most people of his class, had never been in a dental chair until the existence of this trouble; a tooth-brush or mouth-wash was an enigma to him. There was an alveolar abscess impending, resulting from decayed roots; the patient was anaemic; besides the abscess, he was afflicted with pyorrhœa alveolaris, or Riggs disease. As his face continued to swell, instead of going back to the dentist, by the advice of meddlesome neighbors he went to a practicing physician, who ordered him to poultice the region of the swelling with hot flaxseed and hops; in a few days he was an interesting sight. A sinus formed, the physician was sick of his job and sent the man to the hospital, where he was duly admitted and cellulitis of the jaw diagnosed. The loose teeth caused by Riggs disease and the sloughing of small portions of the alveolar process were enough, in his mind, to see a lawyer about, and forthwith he commenced a suit, alleging the usual thing—fracture of the jaw; and of course the doctor who did the poulticing will be relied on for medical testimony, and the entire trouble which the intelligent dentist could have averted and cured in a few days, was interrupted by the patient going into wrong medical hands.

Therefore, be careful, in extracting teeth for strangers, to get name, address and occupation, and if a tooth is broken, be sure to invite the patient to come back, and in cases of abscess have nothing to do with the case unless the patient will agree to call again and report himself; never, under any circumstances, make light of any case, but impress upon the patient something depends upon him. For instance, a man enters your office who has taken a glass or two to brace him up as he calls it; the tooth out, he is so happy that a few more glasses are indulged in; he is very drunk when he reaches his home, and excuses himself to his wife that he had been to the dentist's and had a devil of a time; he really thinks that his jaw was hurt, and sure enough, the next day the effect of his debauch is manifest—swollen face, eyes, etc. "John, you had better see the doctor, I never did think much of that rascally dentist." And in order to hide his own shame, the dentist has to take it. The doctor, in most cases, accepts the statement of the patient; the man is home sick, the wife has told all the neighborhood how her husband has suffered, and the dentist is kept in ignorance of all of this until he is sued, possibly. A fracture of the jaw from the extraction of teeth—that is, a complete solution of the continuity of bone—is so rare, that one is justified in saying that the lesion is almost impossible.

## TIN AND GOLD PLUGS.

*Editor DENTAL ADVERTISER :*

SIR—The following correspondence, which is just to hand, settles very clearly the claim of Dr. Abbott to the original use of this combination. My previous statements are more than proved, as the correspondence shows that Dr. Abbott not only has no claim whatever, but that he “scouted the idea,” and only adopted it after very positive proof that the system was better than his own.

Although not connected directly with the question of gold filling, I retain sufficient interest in the art and sufficient desire that a good operator with original ideas shall be fairly recorded, to be pleased that my constant advocacy for Mr. Lomax should be so thoroughly proved to be correct, and it is well that the matter should be so clearly settled.

THOMAS FLETCHER, F. C. S.

WARRINGTON, Eng., July 13, 1888.

[COPY.]

1 Burlington St., Oxford Station,

MANCHESTER, July 10, 1888.

*Dear Fletcher :*

Visiting Manchester for a few days, I have had my attention called for the first time to some lectures reported in the *Dental Record*, on the subject of Gold and Tin fillings, by Dr. Miller, of Berlin.

I notice the claim made to the discovery for this mode of filling by Dr. Miller, for his father-in-law, the late Dr. Abbott, of Berlin, and your letter asserting that fillings made by me were well before the public long before the date named as the time Dr. Abbott *discovered* this mode of practice.

Enclosed you will find two notes sent to me by Dr. Miller, inspired, no doubt, by your letter in the January number of the *Record*. In my reply I stated that in 1853 I called on Dr. Abbott, and amongst other subjects, discussed the merits of gold and tin as a filling, that he scouted the idea as being absurd, nothing but gold being admissible as a filling according to his belief. After that time Dr. Abbott had opportunities of seeing many fillings made by me with gold and tin, and I was aware of his afterwards trying the same in his own practice. I will now state to you how it came to pass that I first used gold and tin as a filling.

About 1845 or 1846 Mr. Sidney, who purchased here, and who paid much attention to the filling of teeth, used to employ tin for large cavities in



bicuspid and molar teeth ; these fillings were very well made, but when on a masticating surface, I noticed they quickly wore down and assumed a cup-like shape, the edges of the cavities becoming exposed and eventual failure being the result. Noticing the merits of tin as a filling, I thought by adding gold to that material I should probably get over the defect of softness. You and many other dentists must be very familiar with the result, and I dare say most of my dental friends are weary of hearing me advocate the merits of gold and tin, which I did both in and out of season.

I send the two notes from Dr. Miller, with a translation of the one in German for your perusal. Notice the dates. Return to me at your convenience. I thought you might like to have these particulars, as your letter to the *Record* told me you took a sufficiently lively interest in the subject to prevent any little merit there may be in the application of gold and tin as a filling being diverted from its true source.

I am, dear Fletcher, yours truly,

[SIGNED] JAMES W. LOMAX.

[COPY]

January 17, 1888.

*Dear Madam :*

I should be very much obliged if you could let me know if Mr. James Lomax, of Manchester, still practices, and if he was acquainted with my father-in-law ; and if he used tin and gold for filling teeth. You must forgive me for asking so many questions at the same time. It is a question if it were Mr. Lomax, of Manchester, Dr. Abbott, of Berlin, or Dr. Spooner, in America, who first used the now celebrated combination of tin and gold.

[SIGNED] PROF. MILLER.

[COPY]

January 24, 1888.

MR. JAMES LOMAX :

*Dear Sir*—Allow me to thank you for your kind response to my inquiries. I would still like to ask whether you have found that the combination is sufficiently hard to withstand mastication on the grinding surface. Also how you account for the hardening of the material. Third ; what effect moisture has upon the filling ; that is, is the filling materially injured by the access of saliva during the operation ? Fourth ; in what way do you think the gold deteriorates by lying in contact with

tin? Fifth; do you fold the tin or the gold outside? Will you allow me to make use of your letter and your answers to the above questions in any communications that I may make upon this subject to the journals?

With many thanks for your kindness, I am, dear sir,

Very truly yours,

[SIGNED] W. D. MILLER.

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## OFFICE EXPERIENCES.

BY JAW BONE.

If there is one thing that is annoying to the dentist it is the patient who brings along a companion to do the talking for her. Sometimes it is the sister, the mother, a friend of hers, the woman who lives next door, who knows all about it, and, sometimes, the husband. Persons thus acting have the very best of intentions, and they proceed to tell you to be careful. "Now don't break it—and whatever you do don't break the jaw, because," continues this cheerful person, "a friend of mine had her jaw broke and she had an awful time." And you inwardly ask if she had ever met with such a calamity, or if the aforesaid calamity had ever happened to any of her family, and while this mere interchange of words is going on the patient simply does the shivering. That intelligent persons would venture such a conversation is astonishing, but they do, all the same, and their idiotic side of the human brain continues to develop. That these people have any more feeling or respect for the patient than the dentist has, I much doubt, for the practitioner expects to make his living out of such cases, and it behooves him to be as considerate and careful as possible, both for his own reputation and for the feelings of his patient. And sometimes those about to become mothers desire a tooth removed, and this time you may have a careful husband, that is, a *patient*, careful man, a sort of street angel, whose seat on the street car is always at the disposal of a budding beauty or a mature widow, or, in short, anything that may grow in the feminine way—except an old woman or a "colored pusson." With the extreme humanity of this kind of a man, he inquires, "Do you think it dangerous to take the tooth out of a pregnant woman?" You ask to examine the case and see what may be done. The thoughtful man then informs you, in the presence of his dear suffering wife, that he had heard it was dangerous. Now this idiot does not see that the apprehensions that he is raising in his wife's mind are really worse than the operation. I have cases of this kind all the time, and for the benefit of

those who may not have had such experience I will say a few words. When a man and wife call at your office for treatment, you may know very little of their home life or domestic happiness, and upon the question of family a great difference of feeling may exist. The one may want children and the other may not. There are cases where the husband is indifferent to the increase of family for the reason it gives him a good chance to stay away from home; and then the wife may be very fashionable and deadly opposed to a family, because the period of gestation and subsequent care will deprive her of a heap of enjoyment and allow Mrs. Grundy to get in and display her finery while she is an interesting object. This affects the female mind keenly, and the male mind too, sometimes. These shams of society are always to be found, and the dentist may come to know more about them than any one else. An examination of your patient's mouth, may find that it is one of long and continued neglect, and you may properly ask, "Why did you not think of the dentist before marriage or the parturient condition?"

The fact that the American women, as a general thing, are opposed to large families, and perhaps not without reason, may account for the success of those who sell nostrums to abort issue—if such nostrums exist, which is very doubtful. This reminds me of a case where a lady applied to a practitioner for treatment; she was about five or six months pregnant; the doctor on examining concluded to give her the usual thing, a few drops of McMunn's elixir of opium, and told her to lie in a recumbent position. Notwithstanding the treatment, the patient aborted a day or two after, and upon recovery the doctor was sued by the husband for mal-practice. The astonished doctor defended himself, and it came out on the trial that the woman had been cleaning house, carrying water up and down stairs, lifted a trunk and moved a stove, and, perhaps, did some things she did not tell of; however, the case fell through, the woman had deceived her husband and her own doctor, and the husband was silly enough to commence a suit. But the law she did not fool, and the husband paid the costs. The amount of money paid yearly to avoid issue is something enormous. The permanent injury to health every practitioner knows, but the husband does not. Therefore when a pregnant woman applies to me to have a tooth removed, if she be in a fair condition of health I take it out, and in more than two thousand cases I have never known of an injury resulting. A few days ago a gentleman came to me with his wife and wanted a tooth removed; she was pregnant about six months; the usual talk was gone through with: "Will it hurt her?" "Is it dangerous?" etc. I said, "My dear sir, if I thought it involved any danger it would be I that would think of it and not you. I do not know of a single authentic case of preternatural labor being caused by the extraction of a tooth. There are

some cases reported, and some of the professors have said something about the danger of the practice, but in all of these cases the dentist has not known anything of the antecedent causes that might exist." I concluded my conversation by taking out the tooth, and said to the aforesaid husband, "If the taking out of a tooth of a pregnant woman would cause her to abort, the dentist could at once stop all other practice, for his parlors would be filled nearly all the time with patients who would pay him a better price for that than for any other branch of work that he could do."

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## PYÆMIA OF DENTAL ORIGIN.

BY ARTHUR W. W. BAKER, M. D., F. R. C. S. I., SURGEON TO THE DENTAL HOSPITAL OF IRELAND.

Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on June 1st, and published in the *Dublin Journal of Medical Science*.

As pyæmia from dental causes is not very common, or perhaps has not been frequently recognized, the notes of a case which came under my own observation are, I think, deserving of record. Before, however, detailing my own case, I shall refer to some of the scanty literature on the subject.

In the recent edition of Tomes' "Dental Surgery," the author refers to seven cases of acute and chronic pyæmia of dental origin which he has collected from various sources, all of which proved fatal. Two of these, however, in my opinion were, strictly speaking, not pyæmia, as we now understand the term. In one, extension of an abscess connected with a lower wisdom tooth produced some severe unilateral glossitis, and mechanically suffocated the patient. In the other, splintering of the lower jaw in the removal of a tooth gave rise to an abscess, which found its way up the ramus, and through the foramina, ovale, rotundum, and spinosum, into the cavity of the cranium, where meningitis ensued, of which the patient died. The remaining five cases may fairly be classed as pyæmic, and as such deserve our attention, for they point to the fact that alveolar suppuration cannot always be treated as an affection of no moment, but may sometimes be attended with even fatal consequences. Unfortunately, details are wanting in the cases recorded by Mr. Tomes, upon which we might with advantage generalize.

Dr. R. J. Porre, at the International Medical Congress held at Washington in 1887, brought forward some cases of chronic pyæmia of dental origin, in all of which there was, fortunately, a happier termination than in those recorded by Mr. Tomes. Dr. Porre gives the following account



of one of the cases observed by him: The patient, male, good constitution and habits, suffered for the last thirty years from neuralgia, besides having constantly recurring furuncles and eruptions in various parts of the body, which would often for months become running abscesses. He experienced burning and itching eruptions of hands and feet, which would finally change to stubborn ulcerations. His bowels were either stubbornly constipated or exhaustingly loose. He suffered from frequent rigors and febrile attacks of varying intensity, profuse night sweats, retention of urine, serious constrictions of the bowels and urethra. Lancing pains darted from the maxilla of right side to bowels, bladder, limbs, hands and feet, or to whatever part was locally affected at the time. This latter peculiarity, together with the discovery of a little pus exuding from the locality of the wisdom tooth, led to a final correct diagnosis of his case. The tooth referred to was extracted, and a speedy and complete recovery followed. Dr. Porre also read the notes of ten similar cases, which all yielded to the simple remedy of removing the offending tooth.

Mr. Frederick Eve, Curator of the Royal College of Surgeons, England, in a recent communication to the Odontological Society, whilst noticing the fact that in periodontal abscess, although the pus directly gained access to the bone, serious consequences rarely followed—yet related the case of a young man who had been troubled by an abscess in the region of the fangs of a second molar tooth. He attended the funeral of his grandfather, caught cold in the tooth, and died in three weeks of pyæmia.

Some interesting experiments on mice are at present being carried out by Dr. W. D. Miller, of Berlin, by inoculating them with the material obtained from gangrenous pulps. As these experiments are not yet concluded, it would be premature to do more than allude to them here; but from Dr. Miller's recent communication to the *Dental Cosmos*, he is evidently quite alive to the importance of investigating this source of pyæmia.

The following case occurred in my own practice. I am happy to say that it was not fatal, and that I succeeded in curing the patient without sacrificing the offending tooth.

CASE.—Mrs.—, aged thirty-three, widow, consulted me in the beginning of November, 1887, about her first left upper molar tooth, which had given her pain from time to time. The patient appeared to be in excellent health, and presented no evidence of constitutional taint. She stated that the only illness she had had, excepting, of course, her confinements, was a severe attack of scarlatina at twelve years of age, which was followed by general dropsy. At the age of nineteen, the first left upper molar (the tooth about which she consulted me) was filled; this

resulted in an alveolar abscess over the tooth. Ten years later she had another rather acute abscess in the same place, which was followed at once by a small abscess on the fourth toe of the right side; then small abscesses broke out over other parts of the body at the same time, the tooth being the seat of more or less uneasiness. Early in the spring of 1887, she suffered from an abscess in the right ear, which by the medical attendant was thought to be connected with some tooth. About a week previous to consulting me she had a recurrence of the abscess over the left upper molar; this was followed by a small pimple on the back of the right forearm, which at the time of her visit presented the appearance of a small pyæmic abscess. Viewing the case as one of chronic pyæmia, having its origin in the suppuration about the roots of the molar, I decided to try and save the tooth, and in so doing, if possible, to cure the pyæmia.

The tooth I treated by removing all that remained of the dead and decomposed pulp, cleaning out the roots thoroughly, syringing them first with weak carbolic lotion, then with absolute alcohol. The roots were finally dried with hot air and injected with a solution of iodoform in ether, and the filling of the tooth was completed at a subsequent sitting. There was a swelling, about the size of a small marble, on the gum over the buccal roots of the tooth, corresponding to the site of the alveolar abscess to which I have alluded; this I laid open freely, and allowed it to heal from the bottom. The fluid which escaped from this swelling was more like cystic fluid, such as is frequently found as the result of chronic inflammation round the roots of teeth, than true pus.

It is now more than six months since I treated this case, and being interested as to the result, I have kept the patient under observation. She has had no further trouble with the tooth, and the metastatic abscesses have ceased. That the tooth was the source of the poison, to my mind, appears extremely probable, both from the frequency with which the periodontal abscess was succeeded by an abscess elsewhere, and the fact that the small abscess, which was situated on the patient's forearm when she came to me, subsided more rapidly than any previous abscess on treatment of the tooth; and no abscess has since then appeared.

I am not quite clear as to the explanation of why the pyæmia evidenced itself always on the right side, while its dental origin was on the left. That more serious symptoms did not present themselves in this case was most likely due, as pointed out by Mr. Watson Cheyne in his recent lectures on "Suppuration and Septic Diseases," to the small dose of the poison.

The history of this case, taken in conjunction with the others which I have quoted, shows the importance of investigating the condition of the mouth in any case of pyæmia where we are in doubt as to the source of the disease.—*The Dental Record*.

## THE PHYSICAL PROPERTIES OF VULCANITE.

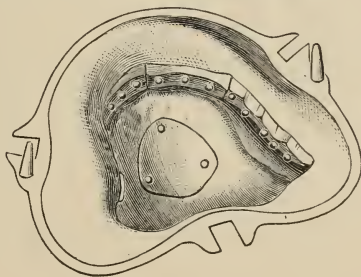
BY THEODORE F. CHUPEIN, D. D. S., PHILADELPHIA, PA.

A series of very sensible articles appeared last year under the above caption from the pen of Dr. George B. Snow, of Buffalo, N. Y., in the DENTAL ADVERTISER.

The writer, after giving many good points and making many valuable suggestions about vulcanite work and the behavior of vulcanite dental plates, recommends that when, from the nature of the case, it is found impracticable to make the plate of equal thickness, the places where the plate will be unduly thick be filled with small pieces of rubber which has been already vulcanized (an old rubber plate, for example, cut up and cleanly filed into small pieces about the size of duck-shot), to compensate for the undue thickness of the plate at these points, and to control the expansion or contraction of the material.

If a set of teeth be waxed up and flaked in the usual way, it will be extremely difficult to know where to place these pieces of vulcanized rubber; the memory being the only guide as to where they are to be put, the procedure is reduced to guess-work.

To overcome this difficulty (recognizing the value of the suggestion) we proceed as follows: After the case has been waxed up as usual, whether gum section or plain teeth are used, the wax is carefully removed from the front part of the sections, or from the front part of the plain teeth, so that these are held in place only by the wax on the palatal surface. Those parts of the sections, or plain teeth, and the plaster model are then painted with rubber solution (red rubber dissolved in chloroform), and when this dries, small pieces of red rubber are packed next the sections to form the rim; or small pieces of pink rubber are packed next the plain teeth to form an imitation of the gum. This being done, the



case is flaked so that the plaster of investment is brought all over the front part of the teeth as shown in the figure. Thus the small pieces of vulcanized rubber may be placed just where they are needed to compensate for the extra thickness or volume of rubber at these points.

The illustration indicates the extent of such extra thickness under the bispicids and molars, for which spaces the vulcanized pieces are to be prepared in the present instance.

Incidentally it may be observed that by this mode of flasking, the teeth are kept in their exact positions relatively to the cast, and, the gates being freely cut in the other part of the flask, the articulation will be found undisturbed even though the flask should not have been accurately and completely closed.

It is well to say that in removing the wax from the front part of the case, this should be all removed before the case is painted with rubber solution, and the small pieces of red or pink vulcanite that are put in place of the wax that was removed should be added to the painted surface with a clean wax spatula, free from all grease, wax, or dirt, and heated (for easier manipulation of these pieces) in the blaze of a spirit-lamp. If there is any grease on the spatula the rubber will not stick to the places where it is wanted.—*The Dental Cosmos*.

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## FALLACIES CONCERNING TOOTH PREPARATIONS.

One of the things for which the pharmacist has to care is the preservation of the teeth of his constituents. He is not to be their dentist, but he has to some extent the preparation of powders, pastes and lotions for cleansing, and the sale of tooth brushes by which these are applied. To some extent, therefore, he is a conservator of good looks and comfortable feelings, while he is equally the foe of foul breath and bad teeth. It is not his function to prescribe in lieu of the dentist any more than in place of the physician; but he should at least know enough of the character of the materials he uses as to be aware whether they are well designed to serve the purposes needed.

It is not every dentist that seems to know just what he should, if we take the following item from the *Archives of Dentistry* as an illustration, where, in a discussion on the "Hygienic treatment of the mouth and teeth" before the "Dental Societies of Connecticut and Massachusetts," one of the speakers said:

From my experience, my results as to tooth powders are these: I do not put in any honey or sugar. Honey is the worst thing you can put in, next orris-root and next sugar. These should not be used because they are fermentable, and so make sore mouths from constant irritation. They have no place in tooth powders. If you want to use something in the place of sugar, use bicarbonate of soda and biborate of soda instead,



as the latter is a benefit and does no harm. Use glycerine if you wish a paste, it does not ferment in the mouth. In place of orris-root grind up cloves. Use cassia or sassafras bark, these do not ferment, as their essential oils prevent fermentation. Yellow or red Peruvian bark is good. In making a powder I would use floated chalk instead of precipitated chalk.

Question. How do you get floated chalk?

Answer. I throw the chalk on the water and gather that which floats, and throw away all that readily precipitates. My formula for a good tooth powder is: take of floated chalk,  $\frac{1}{3}$ ; bicarbonate of soda and biborate of soda, each,  $\frac{1}{8}$ ; salicylic acid,  $\frac{1}{30}$ ; extract of cinchona,  $\frac{1}{33}$ ; oil cloves,  $\frac{1}{50}$ ; oil sassafras,  $\frac{1}{50}$ ; and oil cassia,  $\frac{1}{50}$ . Subject passed.

We should think the subject would have been "passed," or else that some one would have opened up some of the fallacies that had been uttered by the individual who had thus freed his mind.

These fallacies are the assertions that under the conditions stated, viz.: the use of the articles named in tooth powder or paste are objectionable, "because they are fermentable, and so make sore mouths from irritation."

Did it occur to the speaker that the fermentation of orris-root is an impossibility? It contains nothing fermentable under any ordinary conditions, much less when used as a tooth powder. Sugar he denounces for the same cause—fermentability. Is he aware that cane-sugar (which is the only kind used in tooth powders) must first be changed into grape-sugar before it will ferment, and that it requires some hours for this process to be effected? Again, sugar and honey are readily soluble in the moisture of the mouth, and they could not remain there long enough for any such action to take place.

We are aware that many persons neglect their teeth, fail to properly cleanse them, but how could such evil results as the speaker depicted ever follow the use of the tooth brush with any kind of powder, paste or liquid?

The use of a portion of bicarbonate or biborate of soda is unobjectionable, but there is no special necessity for it, and we positively deny that the evils predicted or asserted by the speaker can ever follow the use of orris-root, honey or sugar. We note the peculiar formula the same speaker gave for his "ideal" tooth powder, and would like to inquire how it can be prepared by any such formula. To the apothecary the explanation of "floated chalk" will appear somewhat ludicrous, though it is a rude attempt to explain a process with which the speaker was evidently not practically familiar. "Floated chalk" can be purchased of better quality than home made, and better yet is the "precipitated" chalk of the market, which is a chemical product and cannot possibly contain any silicious material. If he is reported correctly, it does poor justice to his

knowledge of mathematics. The formula particularly gives specific proportions, but it will require some "new system" to make it intelligible to ordinary mortals.

We hope none others of the dental or pharmaceutical fraternities will be led to omit the time-honored and fragrant orris-root, or the palatable saccharines from their formulas because of these "new ideas" which have been broached by a member of the dental association and have found their way into print.—*Medical Classics*.

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### A PLASTIC FILLING\*.

BY H. B. TILESTON, D. D. S., LOUISVILLE, KY.

It was not my intention to have it understood that my contribution was to be an essay on the subject of Plastic Fillings in general, nor indeed an essay at all, my only desire being to bring to the attention of the profession a plastic filling which I have been using for some time with such satisfaction to myself that I am anxious to give the profession the benefit of it; as much "pro bono publico" as "pro bono professiones."

I do not claim entire originality in the matter and it may be that some of you have already used it, but I am sure it will be new to some and worth trying again by those who may have used it before; and even if condemned by the latter, I shall be none the less satisfied with what it has accomplished in my own practice, and none the less convinced that in its place it is a good thing.

I may remark just here, that any filling material used without judgment as to its proper place under varying conditions, may prove of no value.

To be brief and to the point, the material of which I speak is composed of amalgam and oxyphosphate of zinc in proportions not fixed, but varying according to the case in hand. I first mix the amalgam just as I would for an amalgam filling, save that I do not express the mercury unless the excess is considerable. I then mix the oxyphosphate quite thin and quickly incorporate into it the pellet of amalgam, working it thoroughly with a very stiff spatula; I then roll the pellet between my thumb and finger and immediately introduce it into the previously dried cavity, press into place and burnish to the edges, trimming the excess with a burnisher.

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\* Read before the Kentucky Dental Association, 1888.

I claim for this filling, that it combines the best and most desirable properties of each material, and eliminates, to a large extent, some of the most objectionable features of both.

The spheroidal tendency of the amalgam by which a slight crevice so often appears above the edges of such fillings, is entirely overcome by the presence of the cement, while the solubility of the cement is almost, if not entirely, counteracted by the stability of the amalgam. The compound does not set so quickly as the cement alone, but much more quickly than amalgam. When hardened, it takes a metallic finish under the burnisher and it is sufficiently hard in five minutes to be burnished.

The thermal conduction is less than that of amalgam used alone, and altogether it seems to be more compatible with toothbone than is amalgam.

We frequently meet with cavities in molars and bicuspid located upon the distal, buccal or palatal surfaces, large and superficial, with no lateral walls in which to make retaining grooves, or perhaps with one wall entirely broken away and the cavity so out of reach or so sensitive that extensive excavation is impossible. Amalgam in such a place is out of the question, and oxyphosphate, owing to its temporary character, is also objectionable, but it is the only thing we can rely upon to stay in such a cavity. Doubtless under such circumstances as this, we have all wished again and again for a material that would both adhere to the walls and be lasting.

These are the cases wherein the composition filling is pre-eminently indicated.

If the cavity is so shallow as to require a filling more of the nature of a cement, I use a greater proportion of oxyphosphate; if the cavity is deep enough to be slightly retaining in shape, for the sake of the greater stability of the filling I introduce more amalgam than cement.

Where the cavity involves the masticating surface, I cover the exposed face of the filling with pure amalgam, thus presenting a more resistant surface to the attrition of mastication. The amalgam in such a case adheres without difficulty and becomes a part of the filling.

For some time I confined the use of this material to the class of cavities of which I have just spoken, but as I became more confident of its efficiency I have gradually extended the field of its usefulness until now I use it in nearly all approximal cavities which I would otherwise fill with amalgam. My experience with it convinces me that it is more reliable in approximal cavities than amalgam.

One case, more marked perhaps than any other, I will relate. The case is that of a lady, whose teeth have been under my care over five years, and during that time I have repeatedly filled her superior bicuspid teeth; they were largely decayed when I first saw them and I filled them with amalgam. The quality of the teeth was very poor and in a few months refilling was necessary, when the teeth could no longer be filled with

amalgam, I resorted to oxyphosphate cement but this proved quite soluble in the fluids of the mouth and had to be frequently renewed. Two years ago in July I filled these teeth with amalgam and cement mixed together as I have described. I saw them a month or two ago and they were then in excellent condition.

I find this mixture useful in setting Bonwill's crowns. The post may be set in the root with the mixture, then the crown filled with pure amalgam and pressed down upon the plastic root filling, and packed against it with an instrument through the crown opening, and the operation finished with amalgam, or the mixture may be used throughout the entire operation.

I also use this mixture for filling approximal cavities in deciduous teeth. It is more quickly introduced than amalgam and does better service than either amalgam, cement or gutta-percha.

Gentlemen, I present this mixture to you in the hope that you will give it a trial and report at our next meeting what the result of your experience has been. No doubt some of you can improve upon the method of mixing or using it; if so, I want the benefit of your experience and improvement. I know from what I have seen of it in five years' constant use, that it is a valuable servant and can be made to do good work. I am satisfied you will find many places to put it, and the more you use it the more you will like it.—*The Dental Review*.

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ALONG CAME TWO WOMEN with babies in their arms, then a man with three children, then a troop of boys and girls under ten years, until the number of children was about fifteen. Last came a woman and a baby coach in a great hurry.

"Am I too late?" she asked.

"You're just in time," said Mr. Gilmore, "now put the children in the pan."

In they went, and the workmen with big shovels stirred up the big piles of green lime until the little ones whooped and hopped like a band of Comanches or Pawnees. The mothers held the little babies over the edge of the purifying pan until the ammonia made big tears drop from their eyes, and they were almost blinded. The more they coughed, Mr. Gilmore said, the better it was for them.

"Now, take them on the water," he said, "and bring them back here two or three times again."

Chief Engineer Park says that this treatment for whooping cough and typhus complaints is now endorsed by the best physicians in Philadelphia, and hundreds of cases are now treated yearly at the Gas Works.—*From a Purifying House Sketch, in the Philadelphia Star*.



## "TRY AGAIN."

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BY S. B. PALMER, M. D. S., SYRACUSE, N. Y.

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Read before the Central Dental Association of Northern New Jersey.

It would have afforded me great pleasure to have been present at the reading of this paper. It was not best for me to be absent just at this time; the best I can do, is to offer a few practical suggestions respecting the further preservation of a class of teeth, which at present, if teeth possessed intelligence, would have reason to tremble in their sockets.

This has reference to teeth (generally those of adults) such as have been filled and refilled until further treatment would seem hopeless. The discouraged patient looks into the future and beholds the "crowning day coming" but is not ready to meet it. In most cases it is best to "try again" to fill the teeth.

Throughout the history of dentistry, badly decayed teeth have shared a hard fate. The mechanical dentist, whose revenue is received mainly from the insertion of artificial dentures, longs to grasp them in the forceps; on the other hand, the more advanced prosthetic operator sees in them good supports for crowns and bridges, and as readily attacks the crown with excising forceps, and the quivering pulp with sharp sticks. This is no criticism upon this class of operations, when done properly, as no one can enjoy its benefits to a greater degree than the writer.

It may be desirable to retain teeth which by ordinary methods would not be worth filling. The process to which I allude consists in fitting pure gold plate coverings, to protect the surface from wearing, while the remaining portion is filled with phosphate cement. This style of work is not introduced as new or original. It, however, possesses greater merit than has been awarded to it. The demand for surface protection has led to the late invention of porcelain coverings, designed to be used in like manner for the same purpose; also, a furnace for baking porcelain for ten dollars per month, besides other devices not necessary to mention in this connection for "Land's" sake. In some respects, I am in favor of "high license," but not in this case.

The cases for which gold coverings are most appropriate are found on the oral teeth, on labial surfaces or where the gums have receded from the enamel. The form of the cavity is often of a crescent shape, color of decalcified portion dark brown, with margins far below the normal structure of a tooth. All know that these conditions forbid gold for permanency. The operation consists, 1st, in preparing the cavity in the form the case demands, avoiding sharp angles. 2d, cut from a plate of pure gold, of about twice the thickness of dental plate, a piece a little

larger than the surface of the cavity, bend it to the curve of the tooth, then grasp it with delicately-pointed pliers and grind it to fit with a corundum wheel on the engine. Be careful to grind on a bevel, like a screw head, the inner surface being the smaller. By this means the outer surface may be made to fit accurately. When fitted, lay the convex surface upon a piece of cement, such as the gasfitters use for cementing joints; heat an instrument and press the gold until it becomes imbedded in the compound, then go over the surface with a sharp graver and raise up points. On removal, should any of the compound adhere to the gold, remove it by holding in the flame of a lamp. Try it in the cavity to see that it does rest upon the points. When ready, set it with oxyphosphate, the same as you would a crown or band. After years of wear such fillings look like solid gold; decay is unknown beneath the gold. Large crown cavities need more than the raised points to hold them firm. One case which I will mention will explain for all. A bicuspid was decayed from the approximal surfaces across the crown, leaving the outer and inner cusps perfect, with walls so thin that any packing of gold would wedge them apart; a plate in the form of a staple was fitted and cemented as above described. The occlusion of the opposite teeth depressed the center of the gold, causing the end to spring out and loosening the piece. To guard against like failures, I cut a fine thread from a plate of gold and platinum, and wound it around a fine wire in the form of a spiral spring. Solder one side of the spiral to the gold; the solder will give strength to the piece, and the gold and platinum, whether cut apart or left in loops, will afford firm anchorage for the gold covering.

Large, unsightly amalgam fillings can be covered beautifully by this process. In cases where patients object to amalgam, beautiful fillings may be made in this way.

Another, and I think original, operation has helped out of difficulties where few would have faith to "try again." That is, re-inserting gold fillings. This has been my practice over eight years. The idea was given to the profession in a paper during the time when society transactions were intended for the good of members only, or at least, it has not been tried so far as known. The first case was one where a superior central, articulated squarely with the inferior teeth, and till about one-fourth of the tooth had been worn away, which loosened the fillings on each side, so that the cavity when prepared extended from the lateral surfaces across the cutting edge, making one filling. Several years after the filling was inserted the patient returned with it loose, the tooth having worn away. The thought came to re-insert the same plug. The cavity was excavated sufficiently deep to receive the plug and it was set in phosphate. This must have been eight years ago, and since then the same thing occurred and the process was repeated. I think it is still

doing well. The tooth is of a dark yellow color, and very soft; gold alone would not be worth the trial in this case.

Other cases soon followed where the corners of incisors had been restored by contour fillings, and the fillings treated with equal success, even better. Where the tooth structure is firm there is no failure.

The most novel case is one which has been in use six or seven years. A superior incisor had lost a large contour filling. On replacing it the gold fitted quite accurately and it was cemented in. After a time the case returned with the thin corner of the filling broken away, enough to spoil the looks of it. I went to work to remove the filling whole. I could only do it by the use of the smallest fissure bur upon the lingual surface of the tooth, which of course left that portion of the cavity much too large. As the tooth was hardly of a nature to warrant a new gold filling, the old one was placed on charcoal and the corner built out with solder, which was finished in the lathe and the filling again reinserted, and the structure is at present waiting for a crown, for the faithful duty it has performed.

Observation teaches that a lining of phosphate is a benefit under the metallic filling. Of course, gold cannot be packed upon a thin lining of cement without danger of breaking up the material, but amalgam can, and by this means the dissolving of dentine and shrinkage of filling is overcome. The thinner the lining the better, as there seems to be little or no decomposition in such cases.

For such linings, mix the amalgam and dry the cavity; mix the cement rather thin and press it against the walls of the cavity, and, at once introduce the filling which will force out all except that required to fill the porous dentine and roughened surface of the cavity. This thin lamina seems to perfectly unite the filling to the tooth.

We have reached about the limit of skill in manipulating all the filling materials at our command; we are not satisfied that we have yet arrived at their greatest benefits by combinations in one form or another. I think the best field for investigation lies in cavity lining: there is a lack in all I have tried, yet I will "try again."

Of course, seventy or eighty per cent. of teeth that are filled, need nothing more than good gold fillings to preserve them; but the twenty or thirty per cent. may be in a condition to demand more than gold alone to warrant success. Results do not happen; they are the outcome of chemical laws, instituted by combinations of the materials at the time the plug is inserted. This doctrine was heresy eighteen years ago. Practice is now so modified that the colleges teach discrimination in the use of gold. There is much to commend its use, and it has been the study of the writer to know when, and under what conditions, it could be depended upon.

The physician when called to his patient, first diagnoses the case, then applies the remedy. The dentist should regard each abnormal tooth as a patient, separate from the possessor of the organ.

The large number of teeth that will allow universal treatment, formerly established the practice that gold was the best material. Now, that assertion needs qualification. What would we think of filling with gold the lateral cavities in the incisors for a child eight or ten years of age? The fact that cavities exist at that age is proof that the teeth are not sufficiently calcified to warrant preservation with gold. Perhaps it might be well to give the reason why such fillings prove failures.

The poorly calcified teeth of the young are highly organized; the gold in contact with the sensitive organic tissue creates inflammation sufficient to destroy vitality in the dentine; this is done by thermal shocks. Fully developed teeth may also respond to sudden changes of temperature, the action being so slight as not to devitalize, but rather stimulate, action, whereby the process of calcification is carried on to produce a non-conductor, and thus sensitiveness ceases; while, in the other case, the devitalized portion turns a shade darker and decomposition of the organic matter sets in, which is greatly aided by the conductivity of the plug, which is a potent cause of decay around fillings. Thus far we have been considering teeth below medium grade, still the leaky filling in a normal tooth will bring about the same results, the chemical action being somewhat different, as the fluids which intervene between the plug and dentine soon become acid, which acid acts upon the lime salts, thereby exposing the organic portion of the teeth to thermal changes, with the same disastrous consequences already mentioned.

Having noticed the action of gold upon highly sensitive dentine so often and thoroughly, I rarely fill a cavity that is very sensitive immediately after the preparation has been made; a filling of gutta-percha in a few days will remove all tenderness and no further trouble is experienced.

The importance of correct diagnosis cannot be over-estimated; the requirements at times are beyond our wisdom or knowledge.

Two cases presented in my practice, recently, were so out of the ordinary channel that I give them for the benefit of others. A patient had sought medical treatment for a pain in the angle of the jaw; the difficulty increased till the muscle upon the right side became rigid and inactive; it was with difficulty the mouth could be opened. On examination I found that the third inferior molar contained an amalgam filling on the posterior surface, partially under the gums, also a large crown filling which had been inserted since the one mentioned. The fillings were in good order, and, what is unusual, the crown filling was bright or much the color of one just inserted. The teeth were not sore and the gums were healthy. By testing with warm and cold water there was more



sensitiveness than ought to have been in a tooth that had been filled so long. The crown filling was removed and there was evidence that the filling leaked. The cavity was shallow and large, thus exposing two-thirds of the dentine of the masticating surface. There was no discoloration of dentine and only slight indications of decalcification. To be brief, a filling of gutta-percha soon removed all unpleasant symptoms. The cavity being shallow, the tooth was again filled with amalgam, having previously introduced chloro-percha as a lining; soon all the difficulty disappeared. I think if at first the cavity had been lined, or an amalgam used which contained copper, there would have been no trouble.

The other case was a superior third molar, where I had filled with amalgam on the approximal surface of the second molar, the latter at the time had an amalgam filling in it. The fillings were contoured and all right in that respect. Had one of the plugs been gold I would have looked for like trouble, but not with amalgam. Strange to say, the pain was not from sensitiveness of the dentine or pulp, but in the gums between the teeth and around the wisdom tooth; the tooth was healthy but the gums suppurated from the inflammation, which I attributed to galvanic action between the two fillings, the gums forming a portion of the circuit. The treatment consisted in destroying the contour of the plugs, a good space was gained by the sand-paper disk, and a cure effected.

We read that the "little foxes spoil the vines." In dentistry they may be "bugs" or they may be electric currents; no matter, they get there, and it requires study and patience to know how to exterminate them. "If at first you don't succeed, try, try again."—*The Dental Review*.

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### SLIDIN' TEETH.

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Mr. Tobe Hodge has written a clever sketch of a West Virginia mountaineer who was persuaded by his wife to have his teeth extracted, to "get even" with a neighbor. The description of the extracting of the teeth and taking the impression are so good that we let Tim Price tell his own story regarding it:

"She up off her cheer ez quick ez a young un off a hot hearth, an' sez she, madder than ever, 'Whar's my sun bonnet? I'm goin' arter that tooth man, an' you'll nuss the baby while I'm gone. I'll have your mouth cleared an' slidin' ones put in; an' ef any woman comes foolin' round you I'll slide them out an' hide 'em. You may look purty then if

you kin, Tim Price.' An' shure 'nough, on a Monday morning here she come fetchin' the tooth man along with his files and pinchers; an' she an' him jined dickerin', an' they dickered back an' forrid fer nigh two days.

"The tooth feller seed she wuz sot on havin' two mouth fulls uv slidin' teeth; so he held stiff 'til the ole woman dickered away nigh onto all the trucks we had;—geese feathers, 'sang, sheep's wool, dried fruit, ole hens, geese, a spring shote, two bushels uv ingans, an' her har combins' she wus savin' for a fuzz. I slipped my ole rifle an' Sunday coat out uv the cabin, an' tied up my dog Spider in the woods, so she couldn't git them in the trade, an' I didn't care much fer tother things. Hit 'peared like to me, Colonel, thet I'd need slidin' teeth some day an' I mought ez well hev 'em now while the ole woman wuz in the humor uv payin' fer 'em. So I telled the ole woman I'd agree with her to hev tooth an' tooth about histed with her—fer company like. An' she 'greed to it, an' the feller went to work. Lord, how I laughed when it come her turn for a hist; but I jist p'intedly tell you, Colonel, things had to stan' roun' in thet cabin while the clearin' wuz goin' on; fer the feller made her keep her mouth shet when she wuz off turn, an' she couldn't say nothin' when the pinchers wuz in it; so ther wuz nothin' left for her but slappin' an' jerkin'. The young uns wuz ez red ez beets for a week an' over. By the time he had my mouth cleared hit feeled to me bout ez big ez an oven; an' the corners on it wuz ripped past sewin'—'peared like; an' I felt ez ef thar wuz a big seam in my head that wanted caulkin' mighty bad. When I'd go to shet my mouth ther wuzn't nothin' to stop her goin' on shuttin'—durned ef my chin didn't knock a stone bruise on the p'int uv my nose.

"My lips slanted in till I wuz afraid uv swallerin' 'em, an' ef I went to whistle it were nothin' but a puff, puff, like the bustin' uv a bubble in a pot uv b'ilin' mush. My hull mouth works wuz all floppity, an' full uv puckers, an' drawin' strings, ez a woman's reticule.

"I hed to git one uv the young uns to bite off my chaws uv tobaccy fer me; an' I couldn't eat nothin' nohow 'cept soaked doins an' spoon cookins.

"The ole woman an' me hadn't hed sich a quiet time sence we wuz jined, for she couldn't jaw an' I couldn't swear, an' when we got mad we hed nothin' to do but shake our heads like goin' to fight, an' flop our lips. Things wuz ter'ble, Colonel, ter'ble.

"I hed to git my teeth in first, fer the ole woman wuz so sot on my takin' the shine off Seth Jones. Ez soon ez my jaws—what wuz left uv 'em—could make a dent on a soft-biled egg, the tooth man said he wanted a print of 'em. So he claps a shovel full uv white mud—print-plaster he called it—into my mouth an' telled me to bite. I thought

may be it wuz some trick uv the ole woman to mortar me up, an' she gin him somethin' in trade to do it for her. So I bit tender like, ez if it were a green persimmon, an' I spit out the hull uv the bite flyin'. The tooth man said thet wouldn't do, an' I hed to bite agin. Thar I sat with my mouth mortared up, an' a chunk uv mud in it 'bout ez big ez my shoe—chokin' an' afear'd to swallow—an' the ole woman goin' roun' clappin' her hans an' laughin' an' the children yellin', 'cause they thought I wuz bein' walled up. Byme bye, he took out the mortar; an' may I never—ef thar wuzn't the print uv half my inards onter it. I took a good look at it, fer I never knowed what the inside uv me wuz like afore. He took out of his gripsack a box uv them dinner plate teeth—por-ce-len he called 'em—an' the woman jined pickin' out ez many uv 'em ez she'd bargained fer—fer me. She took little uns, so's she'd get more uv 'em, fer she'd measured roun' Seth Jones's woman's set on her apron, sly like, an' she'd slit her apron fer the measure, an' she'd bargained with the tooth man to give her ez many teeth ez she could git on that much uv apron. Thet's where she hed him, Colonel, fer she took little uns an' got nigh 100. The tooth man told her the little uns wuz fer women, an' that I ought to have teeth 'bout ez big ez a hoss, an' yaller, but she told him thet a bargain wuz a bargain, an' no repentin', an' no Seth Jones should git more teeth in his mouth then her ole man had, er whiter uns aythur. The tooth man fixed 'em up, an' filed 'em an' put 'em in his biler an' biled 'em, an' when they come out, shure 'nough, thar they wuz, Colonel, a hull set uv slidin' teeth—up an' down sets. He slid'd 'em in, an' told me how to do the pumpin' bus'ness on 'em—to help 'em in like—an' then he fotched the ole woman's lookin'-glass fer me to see how I looked. Lord, Colonel, I hed more teeth than a possum, white ez shoe pegs, an' regular as a comb. He telled me to try 'em, an' I went fer a piece uv bacon, like a sassige chopper. I believe them teeth kin eat more'n five men; an' by workin' 'em sideways, I kin saw off clapboards an' palins—fact, Colonel, I done it many a time. Ther a hull mouthful, I tell you; fer the ole woman stretched her apron all she could, an' I got jist thirteen inches an' a quarter uv slidin' teeth.

“ ‘Now,’ sez she, ‘Tim, you foot it up to Seth Jones’s cabin; an’ grin an’ chaw all you kin; an’ take ‘em out an’ show ‘em round; an’ let ole Lew-i-za Jones know thet Jinny Price is a better woman than she is any day, an’ not to be boastified over fer nothin’ notime noway; an’ mind don’t you lose ‘em.’ ”

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THE *Brooklyn Medical Journal*, for August, contains an interesting article on Pain, with special reference to its dental relations, by William M. Thallon, M. D.

MISSOURI STATE DENTAL ASSOCIATION.—EXTRACT  
FROM PROCEEDINGS.

Dr. Eames then read a paper, "Dentists and the Manufacturers of Dental Goods," which claimed that the tariff on dental goods was enormous and unjust, that manufacturers had banded themselves with a "trade association" and were oppressing dentists with their exactions.

In discussing the paper, Dr. McKellops said: "I have been very much interested, and I have taken some part in this matter before. Some six months ago I tried to bring it before the people and have a provision so that foreign goods could be brought to this country at a reasonable price. Why not have things at reasonable prices? We are not able to pay these high prices. We should look to the right so that the poor people of this country may have the benefit of the very best services we are able to give. I want a petition drawn up and I want every dentist in the State of Missouri to sign that petition. I know we have influence enough with Congress to do a good deal. Why should we be snubbed, why should we allow ourselves to be? I am not afraid of any of these men, and I will say, as I have done, to their faces what I will behind their backs, and as long as we submit to it they will go on buying up patents and putting them on the market or burying them as suits their convenience. We do not want free trade. We merely want justice."

Dr. Thompson: "We should stand by our home manufactories. There is a feeling that foreign goods are better than American goods. That is one of the main points in my argument in the article Dr. Eames referred to, which appeared in the *Western Dental Journal*. If we can get the same grade of goods cheaper by inviting foreign competition, I say to do it. Foreign catalogues, when compared with our American ones, show but very little difference in the prices. Blacksmiths can make almost as good instruments as foreign goods. I don't believe that we could have the goods any cheaper."

Dr. Harlan: "I don't know anything about the tariff, although I do know that there are instruments made by foreign factories which are just as good as ours and are sold at a much less price. There is another thing—the cement and alloys manufactured in Europe seem to be much more lasting than ours. I have been asked by a number of gentlemen of France and Germany, 'Why don't you use so-and-so's cement?' I say I can't afford it; we don't have it in our country. I am not one of those who would favor exclusive consumption of foreign goods, but I am one who would like to see competition. I think the time will come when some of the moneyed dentists will come together and run an establishment themselves. This is a question of pure finance."



Dr. Newby: "Persons who have examined the foreign goods of Ash & Son cannot help but notice their superiority over our instruments. Regarding the cements, I have investigated that, and find them very much superior. I think their instruments in general are superior to ours."

Dr. Patrick: "This is a subject that will find its way before long into the churches and Sunday-schools. Dental associations are not the only ones that can be imposed upon. Those instruments that are imported are asked double their value for. They tell us it is protecting American labor. It is doing nothing of the kind. American labor is suffering as well. We could stand high tariff, but when it comes to importing labor, we can't stand that. For instance, in the little town in which I live, one firm received \$30,000 to shut down, thus throwing its workmen out of employment; that is protection. Their principle is to buy as cheap as they can and sell as dear as they can; that is the way it always has been and always will be. I don't see any way to remedy it; there is only one way to remedy the matter when combination won't do it. I am Democratic on the subject, but Republican in principle."

Dr. Lowry: "I am purely American, but my understanding is that Americanism does not mean monopoly. I believe in patronizing American institutions, and would believe in patronizing American dental institutions if I thought there was any justice in it. I say, let England ship her goods here at a reasonable tariff and compete with the American trade."

A motion was made to pass the subject, but pending action, Dr. R. I. Pearson requested the privilege of making a few remarks on the paper, which was granted. Dr. Pearson said:

"So much has been said on the paper already that I do not care to consume the time of the association in a discussion of the tariff feature of it, or compare the relative merits of American dental goods with those manufactured elsewhere, for the very fact of the immense consumption of American products throughout all the countries of Europe attests their superiority. But I do desire to correct an impression that may be made by Dr. Eames' allusion to the 'American Dental Trade Association.' This association is not organized, as Dr. Eames intimates, for the express purpose of keeping up prices on dental goods, or in other ways oppressing the dental profession, for, in a word, their interests are identical. It is an organization of business men, just as this association is an organization of professional men, and any legitimate manufacturer or dealer in dental goods who desires to conduct his business upon business principles is eligible to its membership, just as any capable member of the dental profession who is willing to conduct his practice upon ethical principles is eligible to membership in this or any other similar organization. It is

true that dealers in dental goods are in the business for the profit there is in it—and why shouldn't they be? And if those profits are not derived from you, I ask, in the name of reason, from whom would they be derived? Do any of you practice dentistry for mere love of the calling? Not one. And so far from the Trade Association having for its object your oppression, I only ask from the members of this association an unbiased review of the price lists on dental goods, to prove that since its organization prices have been systematically reduced whenever and wherever possible or practicable. But do we find a commensurate reduction in the prices of dental work? I think not, and I fear that the 'reductions' can never be great enough to enable the 'poor people,' of whom my friend Dr. McKellops seems so solicitous, to avail themselves of those 'very best services.' In discussing the paper, Dr. McKellops also brings up the subject of patents, and, in conclusion, I want to ask him if it has ever occurred to him where these same patents emanate? Does he suppose that they are all the product of the manufacturer, or does he not *know* that nine-tenths of them result from the fertile brain of members of his own profession? and does he recall, amid the thousands with which he is familiar, one in a hundred that was given to the profession 'without money and without price'? I don't think he can. The maxim that 'the laborer is worthy of his hire,' finds favorable application here, and there is no just, no sensible reason why the dentist, as well as any one else, should not receive the benefits derived from his superiority of mind in any given direction. Just so long as man exists he will invent, and just so long as he invents will there be found those who will want to utilize the product of his brain for the benefit of their hands without giving commensurate return."—*Western Dental Journal*.

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## THE EDITOR OF THE ARCHIVES vs. THE MANUFACTURERS OF DENTAL GOODS.

Dr. W. H. Eames, editor of the *Archives*, read a paper at the recent Missouri meeting upon "Dentists and the Manufacturers of Dental Goods," which is so full of inaccuracies and misstatements that we propose to give it a sadly-needed ventilation. The paper referred to has since been published in the *Archives*, p. 378, under the *nom de plume* of "Old Practitioner," and we refer our readers to that journal for the full text, as we cannot give space to anything save the leading, or rather, misleading, statements.

Dr. Eames starts out by saying that he had written the article partly in answer to an editorial in the June number of the *Western Dental Journal*,

entitled "Let Americans use American Dental Goods," which was written by Dr. A. H. Thompson, one of the editors. Dr. Eames, however, while he starts out with the evident intention of demolishing the arguments of our associate, finds himself agreeing practically with the conclusions embodied in the editorial referred to, for he says, "I am free to confess, however, that, all things being equal, I would unquestionably give preference to my own countrymen in transactions of any kind, be they commercial or otherwise, just as I would to members of my own family as against the stranger." Practically this is all that Dr. Thompson advised, and so we leave that part of the question and come down to the discussion of the relation of dentists and the manufacturers of dental goods. Dr. Eames puts in thus, "to draw the attention of the profession to serious existing evils in regard to the matter of dental supplies." He then launches out upon a tirade against American manufacturers, the American Dental Trade Association, and the tariff on dental goods, which would do credit to the stump-speaking demagogue before an ignorant audience. For instance, in speaking of the American manufacturer, he says, "I would give them the benefit of a duty on imported goods that would in a measure equalize the cost of production in this country and Europe, so that when goods are placed on the market their quality alone would be the only thing to determine their sale. We all understand well enough that not only is the price of labor higher, but also that the cost of living is greater in this country than in Europe, and a tariff, therefore, that will equalize the cost of the manufactured article is necessary." Dr. Eames then gives a list to show the rate of duties on dental goods, which ranges from 20 per cent. on teeth and 45 per cent. on steel goods to 65 per cent. on amalgams. Now Dr. Eames ought to know, if he does not, that the difference in wages in this country and in England is *considerably more than the average duties on dental goods*. Operatives that are paid in this country from \$14.00 up to say \$20.00 could not obtain in London over 25 to 35 shillings per week, an average say of about one-half. This can be substantiated, and is a complete answer to the whole article, which inveighs against the manufacturer, tickles his hearers with a list of high duties on dental goods, but fails to instruct them that the tariff hardly makes good the different cost of production in the two countries. He starts out by asking that the cost of manufacture should be equalized, and by the very list he gives *proves* that that is all that is done. He is consumed by his own logic.

Upon the duty on gold foil Dr. Eames says, "The duty on gold foil is \$12.00 per ounce. One would think that as the government gives the American manufacturer the advantage of \$12.00 an ounce over his rival in a foreign country, a substantial share of this advantage should accrue to the benefit of the workman. You will be amazed when I tell you

that one dollar an ounce is considered sufficient compensation for beating out and putting up an ounce of gold. That is to say, the manufacturer has \$12.00 advantage and gives one to the skilled mechanic."

Now we desire to inform Dr. Eames that gold foil is *retailed* in this country at from \$27.00 to \$30.00 per ounce; deduct from this his \$12.00 protection, and it brings gold down to \$15.00 to \$18.00 per ounce. Does the editor of the *Archives* not know that this is less than the metal is worth before it is touched? Does he not know that the metal in ingot is worth between \$21.00 and \$22.00 before any work is put upon it? It is a fact, whether he knows it or not. Now how much credit should be given to a writer upon trade relations who thus blunders where even a school-boy should not? Now the fact is, in regard to gold foil, that it is sold in this country both at wholesale and retail as cheap as anywhere in Europe, notwithstanding the fact that it does not cost the European manufacturer more than half as much to make it as it does the American manufacturer. This can be proved in a few minutes by reference to price catalogues of the manufacturers in both countries.

The remarks of Dr. Eames upon every point touched in the article are upon a par with the principal points to which we have referred. It is "clap-trap." Dental manufacturers are denominated "cormorants." He says they force the price of dental supplies up to the highest point, and then order the dentist to "stand and deliver." The expressions "*grinding monopoly*," "*domineering, arrogant and despotic*," scarcely seem to be of sufficient force to express the editor's real sentiment about the manufacturers of dental goods. We advise him to read up on his subject before again attempting it. Conventions are very apt to applaud heartily a paper of this kind, but very few of them would attempt to defend its statements in private conversation. We do not champion the manufacturers of dental goods—they are abundantly able to take care of themselves; but we do not wish to see false statements upon matters in which the profession is interested, and should have definite knowledge, go uncorrected.

To-day dental goods of every description are sold cheaper than ever before, and we believe that a spirit of fairness has guided the manufacturers and dealers in their relations with the dentists. Dealers know full well that their success must be commensurate with fair dealing, and that the "stand and deliver" principle would work their rapid ruin.

There is another phase to this discussion, which, if given due consideration, would put those who are continually railing at dental dealers in an unfavorable light. The man who places fifty cents' worth of gold in a tooth and receives for the operation from five to twenty-five dollars is scarcely consistent when he damns the dealer who receives fifty cents profit upon an eighth of an ounce of the same foil, or the manufacturer whose profit is little more.



The truth is that there is scarcely any profession that receives so great returns for the capital invested—making liberal estimates for the learning which is the result of time and study and actual money paid out—as the members of the dental profession. When dentists, therefore, lose their heads and arraign the manufacturers, the dealers, and the tariff, and sign petitions to Congress asking for relief, they would do well to look at all sides of the question calmly, and not subject themselves to ridicule, and to having their petitions consigned to the waste-baskets of thoughtful congressmen.—*Western Dental Journal*.

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## TIN AND GOLD FILLINGS.

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BY W. D. MILLER, BERLIN.

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In the April number of the *Dental Register*, pages 191-2, may be found the following statements:

“Dr. Conrad: Said that a short time since, Dr. Eames had a patient of Dr. Herbst’s. There were about fifty of these combination fillings in the mouth. In ten or twelve the tin has disappeared entirely, in two or three partially, and the other fillings were in such a condition that they all had to come out. The failure was attributed to the kind of tin used in the operations.

“Dr. Watt: Said that in some cases the action brought about by the combination caused uneasy sensations or pain in the tooth and sometimes so severe as to cause sleeplessness. He stated that it was not thoroughly understood just what the trouble was, but he was of the opinion that it was thermal electricity.

“Dr. McKellops: Had seen much of the combination filling, but there was nothing that gave him more satisfaction than gold. He thought non-cohesive gold was just as adaptable as tin or tin and gold. This could be proven by experiment. Take tin and adapt it to the wall of a cavity, and then adapt pure gold to the same wall, and you will perceive that the hair lines on both are precisely alike.”

To these statements permit me to answer first: No kind of tin foil I ever saw, not even that which comes around soft cheese, is bad enough to account for the failures mentioned by Dr. Conrad. *Rotation did it*. The first layers of tin and gold may be pressed against the walls of the cavity by a rotating burnisher, or by a hand burnisher, but any one who attempts to complete a tin and gold filling by rotation alone, must, I fear, expect the results recorded by Dr. Conrad.

I do not at all agree with, in fact I most emphatically disagree with, Dr. Watt's statement. Having used tin and gold in over ten thousand cases, and seen nearly as many more where it had been used by Drs. Abbott, Jenkins, Sachs, and others, I have in not a single case observed any uneasy sensations characteristic of this combination.

Dr. McKellops' experiment is not a test of adaptability, although curiously enough it has been looked upon as such by dentists for many years.

According to this test, extra-cohesive gold foil is more adaptable than either non-cohesive gold foil or tin foil, while rubber or coffer-dam, which we know is an excellent material for obtaining a water-tight joint, is absolutely non-adaptable. We can obtain a beautiful impression of a coin with extra-cohesive gold foil, a less perfect impression with non-cohesive or tin foil, and no impression at all with rubber. This experiment indicates simply the property of retaining an impression once given. Adaptability must be tested in altogether a different manner. Having used both non-cohesive gold and tin and gold very extensively, I do not hesitate to attribute a higher degree of adaptability to the latter material.  
—*Dental Register*.

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## DENTAL PERIODICAL LITERATURE.

Exactly how to conduct a dental journal is a thing "no fellow can find out"; and even if some fellow could, he would not likely have anything to do in journalism, or if he should, he probably would not conduct a journal according to his best knowledge and ability. But suppose that he, with his perfect knowledge of the matter, should "give his whole mind to it," and produce a perfect specimen of periodical literature, he would have but a small list of subscribers, and, hence, but a limited advertising patronage. For it is almost certain that our profession is not yet ready for perfect literature.

If we think of our profession as an army, we recognize the journalists as self-detailed for picket duty. And every man in camp has a right to expect and demand from the pickets the strictest attention to duty. The pickets *must* watch, though others sleep; and they don't fret at being held to a strict accountability.

And the publishers and editors of professional periodicals should not object to criticism, nor should they fail to give respectful attention to friendly suggestions. We don't yet know all; and if we did, the fact possibly might not be universally recognized at once; and one not yet informed as to the perfection of our attainments must be forgiven for a

little criticism. Pickles and spices improve the bill of fare, and sharpen the appetite. Legitimate criticisms are quite as appetizing and refreshing in their way, and we enjoy them with as true a relish. And hence we have enjoyed reading, in the transactions of the Illinois State Dental Society, the report of the Committee on Dental Science and Literature and the criticisms thereon, as hinted at and set forth in *The Dental Review*.

We learn that the report states "that the lack of originality in dental periodicals was unusually prominent"—(for the past year, we infer, but do not know if the lack is unusually prominent, as compared with previous years, or as dental compare with other professional periodicals. But let us study on this, brethren). The report goes on to say that "much reprinting is done," and then it gives good advice to the profession as to proper patronage of the periodicals by purse and pen; and all the periodicals say amen.

A good member suggests there is "too much rehash in our dental journals, too much reprinting, and in fact, too many publications." All of which we may steadfastly believe, and yet fail, unless he and his brethren teach us how many publications there ought to be, and which ones, besides the *Ohio Journal*, should be allowed to continue. And then, if they would kindly suppress the others, all would be lovely.

And the profession can do all this without jar or discord. If our friend, Dr. Sitherwood, and all his brethren *would* turn their attention to their favorite periodicals, and write them up in proper style—furnish them with good original matter—they can stop the "rehash"—crowd it out in a month; and the "survival of the fittest" will determine the ones to be kept up, and those to be suspended, if there are too many. And the brethren can well afford this for the good of the cause, and the benefit of the race, and it will require no greater sacrifices than are regularly made by most, if not all, who are responsible for dental periodicals.

But the creamy criticism comes from our alphabetical brother, Patrick: "Dental journalism falls very much short of accomplishing its work," says J. J. R. P., which is true of the dental profession as well, and of the human race, perhaps. Further, he tell us: "The journals will publish anything and everything that is sent to them." Has he seen all the "waste baskets?" Or is he like the man who claimed that a crow will live two hundred years, for he had tried it twice? He also reiterates the charge of copying from each other, and claims as a result that he "can read from all the journals what is worth reading in about one hour." It is possible that reading is as rapid as cholera in some constitutions; but a school-master of pioneer times would enjoin a "minding of the stops."

But these charges are all trivial; but here is the serious one: "Dental

societies all over the country permit journals to make reports of their proceedings and then dispose of them to the subscriber. The subscriber pays for what the publishers take or get for nothing. There is here room for much improvement." This principle has a wider application. Dental societies permit members, invited guests, and even stray dentists, to attend their meetings, and gain all the new and useful ideas they can from the proceedings, enabling them to greatly improve their methods of practice, and then dispose of these to their patrons, properly charging higher fees than they had a right to before gaining these higher attainments. Thus the patients pay for what the dentists take or get for nothing. Is there "here room for much improvement?" Cannot all this be prevented by excluding reporters, visitors and spectators, and all becoming *nostrum* venders and Yankee tinkers? Then one small quarterly would supply the need, and it would not be tempted to copy.

The man who has received more thought from his profession than he has given to it is in debt, and should pay up. And if all such would do it, the periodicals would overflow with original matter.— *The Ohio Journal of Dental Science*.

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## OBITUARY.

DR. GEORGE W. KEELY.

Hosts of our readers will receive a shock when they read this announcement.

Dr. Keely was enjoying his usual perfect health until Wednesday evening, (August 22), when the accident befell him which caused his death the following Friday afternoon at 2 o'clock (August 24), 1888. On the evening of the 22d the doctor went up into the third story of the building in Oxford in which his office is situated, to mend the wire of a private telephone connecting his office and residence. The wire could be easily reached with a hoe from a rear window. The doctor sat sideways in the window, with a hoe in one hand and a pocket pen-knife in the other, when, from dizziness or some cause, he fell from the window into a court, some twenty-eight feet below. He must have remained unconscious for two or three hours, when, recovering his senses, he, with great difficulty, was able to crawl to the front of the building on the street, where, in time, he was found by Marshal Kyler, who was patrolling the town. This was about midnight. The doctor was helped to his home, covered with blood and bruises, and, as was found by the surgeon, Dr. Hill, of Oxford, who was immediately summoned, the broken-bladed pen knife stiking firmly in the skull. This was removed



only after considerable difficulty and after the operation of trephining had been performed. The other injuries that were apparent after examination were some bad fractures of the fingers of the left hand and bruises of the head, back and shoulders. Dr. Keely, however, seemed so comfortable at five o'clock on the morning after the accident that Dr. Hill felt secure in leaving him and coming to the city for a couple of days. On Friday morning it was found that some of the ribs had been fractured, causing internal injury, from which the doctor rapidly sank until two o'clock, when he died.

Dr. Keely was in his 65th year, and though old in years, was as vigorous in health and intellect as ever. He was as enthusiastic in his profession, as careful a student, as thorough an experimenter, as any one could be in the beginning of a professional career. His name is known wherever "American Dentistry" is known, any where in the world. He has held the highest places in the dental societies of which he has always been an active member. At the time of his death he held the office of Treasurer of the American Dental Association.

Born in Oxford, Ohio, and keeping his residence there all his life within a stone's throw of the old homestead, the doctor had become so identified with the town for a half century that no history of Oxford could be complete without constant reference to the acts of kindness and usefulness and unselfish work on the part of Dr. Keely for the benefit of his native village. He was a trustee of the Ohio Dental College of Cincinnati, and always active in its councils. He was a lecturer in the college on his special branch, and has held many hundreds of students deeply interested in his lectures. A good man, a useful man, a kind and genial man, a man whom everybody loved, has gone. We shall not meet his like again.—*The Cincinnati Medical Journal*.

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MRS. S. B. PALMER.

The many friends of Mrs. Jane Elizabeth Palmer, wife of Dr. Stewart B. Palmer, of Syracuse, N. Y., will regret to learn of her sudden death, which occurred at Thousand Island Park, on September 5th. Mrs. Palmer had been in ill health for some time, but not so seriously as to occasion alarm to her friends. In the early part of the summer, in company with her husband, she went to the Islands, as has been their custom for many years. The immediate cause of death was pulmonary apoplexy. Mrs. Palmer was known to her friends as a woman of rare social qualities, which deepened and intensified as the years advanced. She was of English parentage, and was born at Otisco about 59 years ago. Thirty years ago she was united in marriage to Dr. Palmer, and for some years resided at Tully, where her husband followed his profession of dentist. About 1868, they removed to Syracuse, where they have since resided.

## THE MEDICAL (AND DENTAL) STUDENT.

He leaves his father's acres, the store, or shop or baker's,  
 Determined to assuage his fellows' ills;  
 He will have a horse and buggy, and the day'll indeed be muggy  
 When he doesn't get a few ten-dollar bills.  
 So you'll find him in the city; and it really seems a pity  
 That his boarding-house is not a lovelier place;  
 But tho' living in an attic, 'tis with feelings quite ecstatic  
 He prepares to be a blessing to his race.  
 He's not much filthy lucre, but with pipes and beer and euchre  
 Great comfort in his daily life he takes;  
 With all absence of conjecture, he discusses every lecture  
 And shows how each Professor makes mistakes.  
 He takes the lady-boarder, whene'er he can afford a  
 Ticket, to the theatre or ball;  
 And he wins her young affections with his stories of dissections  
 And other things adapted to appall.  
 But when terms approach their ending, to quiz he's strict attending  
 And indifference to industry is changed;  
 In his most ingenuous manner, he explains the wondrous plan u-  
 Pon which human beings are arranged.  
 When he gets the wished diploma, it would truly take a tome or  
 Two of paper to describe  
 How supremely keen his bliss is, how the world seems full of kisses  
 And how many mugs of beer he doth imbibe.

M. S.—*The Doctor.*

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IN A LECTURE before the Society for Natural and Medical Sciences, of Dresden, on cocaine, Dr. Friedrich Haenel gives his method of using the drug in extraction of teeth: I practice an injection of 0.005 gr. cocaine on each side of the tooth between gum and alveola, and then, after about 5 minutes, I apply the forceps. If the patient at this moment still experiences some pain, I wait for awhile. In a great number of cases, the effect was complete, *i. e.*, the patients did not experience any pain at all. In other cases of about the same number, a partial result only was to be noticed. Application and raising of the forceps was not felt in a painful manner, while the extraction itself was painful, although in a mitigated degree. In a small number of cases, in about six, cocaine had no result at all.

## CHRISTIAN SCIENCE AIDING DENTISTRY.

A rather unusual method of treatment in connection with a surgical operation was successfully carried out at the recent meeting of the New Jersey State Dental Society at Asbury Park. Dr. G. L. Curtis, of Syracuse, implanted a tooth for Dr. Seymour. Cocaine was used, but the patient felt the toxic effects of the drug.

The other patient was Dr. D. C. Cornwall, and Dr. E. C. Kirk implanted a bicuspid for him. No anæsthetic was used, there were no evidences whatever of discomfort from the operation. Only a few, however, understood that a new departure was being made. The facts are these: Mrs. L. B. Holbrook, the mental physician, at present living at 915 Grand avenue, Asbury Park, was visiting some friends at the hotel, and the subject of Christian Science naturally engaging herself and friends in conversation, she was asked to exhibit the efficacy of the method. She was introduced to Dr. Cornwall (whom she had never met) by Dr. S. C. G. Watkins, of Montclair, chairman of the clinic committee, and treated him for some minutes prior to his undergoing the operation. The result, as has been said, was a perfect success. The doctor gained the reputation of being a stoic, whereas he had been saved this pain by Christian Science. This is perhaps the first time this method has ever been used in dental surgery.—*The Dental Review*.

## PYORRHOEA ALVEOLARIS IN THE ELEPHANT.

Mr. Edwards has consigned to me for examination, a molar of an Asiatic elephant, fallen spontaneously. This tooth was intact, at least in appearance, a fraction of the root having been taken off for examination. It weighed in its dry state 1 kil. .972. The root was covered with a crust of calcareous aspect, of variable thickness, but exceeding at certain points 3 or 4 millimeters. The inferior extremity of the root seemed to have been the seat of an intense pathological process and presented sharp prominences, incompatible with the normal state. We have verified by direct examination, as well as by microscopical, that the calcareous crust covering the root, was constituted by the salivary tartar; that is to say, by the micro-organisms having provoked the deposit of calcareous salts held in solution in the saliva. The examination of the lesions has been made comparatively with those of a tooth root of a large molar of an elephant, reputed healthy. The cementum presented all the degrees of alteration, from the most superficial, to entire disappearance: not

only were there micro-organisms on the surface, but they had penetrated into the whole extent of its thickness. In the points where the dentine had been exposed, there were found in the creases, more or less deep, a covering of micro-organisms, more or less compact, with irregular outlines. These micro-organisms had penetrated to canaliculi, and it is possible had penetrated into the depths of the dentine. The lesions did not differ in any degree from those observed in man, and present, with them, a striking similarity.

We conclude, then, that the Asiatic elephant in captivity may be attacked with the same malady which has been described in man, under the name of *Gingivitis infectious* (*Pyorrhæa alveolaris*).—*The Pacific Record*.

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THE FOLLOWING EXTRACT from the *Daily News*, Chicago, contains truths that it would be well for every young man to consider. Those that are so unfortunate as to be over 40 may not be interested in the perusal: "Every man builds his house by the time he is 40 years old. After that he may decorate it and fresco it and ornament it in many ways, but the house is built and he cannot change it. He has culminated. The growth is over and the processes of decay are beginning or have begun. He will not progress further, but, on the contrary will go backward. Look around you and you will see that it is true. The world's work is being done by men who are less than 40 years old. Look through all the channels of human industry and see the men who are actually pushing on the work; they are all young men. It is the same in business, in law, in the churches, and in the newspapers. Of course the men who are most prominent in affairs are over 40, but they are all men who have done their work. They are not progressing now; they are sitting still. They are not growing; they are decaying. It is true that men may become richer, and they will, of course, have a deeper fund of experience to draw upon as the years go on, but that is not what I mean. It is in the decade between 30 and 40 that they have made themselves or marred themselves. Show me a man 40 years old who has not succeeded and I will show you a man who never will succeed. A man is elected President after he is 40 but the foundations of reputation and fitness were laid before. That is not house-building—it is decoration. A man is appointed Chief Justice after he is 40, but that comes as the fitting prize of a successful career, and so you can run down the list. If you young men would only believe that every year between 30 and 40 was worth a decade of any other part of your lives you would know the most valuable fact that we older men can teach you."



DENTAL SOCIETIES.

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The Fifth, Sixth, Seventh, and Eighth District Dental Societies of the State of New York will unite in a joint convention at the Leland Hotel, Syracuse, October 24th, 25th and 26th.

The meeting will be called to order at 2 o'clock, Wednesday, October 24th. A cordial invitation to be present is extended to the profession. An extensive program has been arranged, and prominent dentists from Chicago, Baltimore, Cincinnati, Philadelphia, New York, Boston, Toronto, Newark, Albany and other cities, have consented to take part. One half day will be devoted to clinics and demonstrations of improved methods of work, and new appliances.

All the leading Dental Manufacturing Companies have arranged to be present with a full line of their goods. They expect to outdo previous exhibitions in this section of the State.

Among the social features of the convention will be a banquet for the dentists, and a reception for the ladies. It is expected that the dentists will bring their wives. A Ladies' Committee has been appointed.

G. L. CURTIS,

*Chairman Business Committee, Syracuse.*

Attention is especially called to the above announcement. The Committee having the matter in charge have set out to have the largest and best gathering ever held in the State, and from present indications they will succeed. Mark the date in your appointment book, and attend.

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NEW YORK DENTAL STUDENTS' SOCIETY.

The Students' Society of the New York College of Dentistry was organized November, 1887, by a few junior members of that college. It is now approaching the beginning of its second year of existence with every prospect of usefulness and success.

Its membership, both active and honorary, now includes upwards of one hundred, while new members are being constantly received. This is believed to be the pioneer society among dental students in America.

The society gives the student opportunity for comparing with his fellows ideas and methods; trains him in accurate and scientific statement of facts; and by the feeling of equality, permits him to freely advance and meet arguments, thus, in many ways, preparing him more fully for the activities of a professional life.

Further information, and a copy of the Constitution and By-Laws, can be obtained by addressing E. H. Babcock, President, 245 East 25th street, New York.

TWO PHILADELPHIA dentists were arrested for practicing in London without being examined and registered. It was shown at the hearing that a recent Act of Parliament recognized the diplomas in dentistry of only two American universities—Harvard and the University of Michigan. Being graduates of the University of Pennsylvania, the two prisoners had no professional standing and were promptly ruled out—apparently a hardship, and not the first inflicted by a technicality.—*New York Tribune*.

Upon what principle of right, rhyme or reason did the British Parliament pass such an act? The universities that have found favor are admirable institutions, but the absurdity of giving their dental departments precedence over all colleges of dentistry is apparent to every professional man. The unjust discrimination and limitation has very much the appearance of an attempt to prohibit American dentists from practicing in England. The knowledge, skill and ingenuity of the American dentist distances all competition and is feared accordingly.—*The Doctor*.

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ONE BOWED OUT AND THE OTHER BOWED IN.—The *Independent Practitioner* has changed hands. Dr. Barrett has bowed out of the editorial chair, and Dr. Sudduth has bowed in. In two months the name of the journal will be changed to ———. It is controlled by the International Dental Journal Association.

Editor Barrett said so much of himself in his valedictory that nothing is left for us to compliment him on. The new editor steps in with a lion-like growl—with a get-out-of-the-way-all-you-little-fellows-or-we-will-swallow-you. We will begin, tremblingly, to grease ourselves, for we think without it we could not be swallowed feet and ears. Harlan saw his doom pending some months ago, and began feeding on four-penny nails so as to make the process of swallowing very uncomfortable to Brother Sudduth's throat.

We welcome the new editor, and wish him an abundant share of the cares and responsibilities of his office. We sincerely hope he will run his journal to please everybody.—*Southern Dental Journal*.

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THE INTERNATIONAL TOOTH CROWN Co. is again out with a "Caution" regarding the patents on bridge work. The James E. Low patent was sustained in the Circuit Court of the United States, and parties constructing bridge work will certainly have to take out licenses. As to the twenty-four other Letters Patent of the United States, covering the Richmond, Büttner, and other artificial tooth crowns, we are not so certain.

REGARDING THE OXYGEN BLOW-PIPE, Mr. Fletcher writes:—"Allow me to correct some errors in reference to my new blow-pipes on page 276 of your last issue. These blow-pipes are similar to the ordinary pattern, except that the oxygen jet is made with a ring of fine holes and is set deeply in the gas tube. They are made in three sizes, to consume respectively about seven, twenty and forty cubic feet of oxygen per hour. The latter size will fuse a hole through a wrought iron or steel plate  $\frac{1}{4}$ -inch thick in about forty seconds, and will penetrate a steel armor plate one inch thick in three to four minutes. These blow-pipes are not of much interest to the dental world, but their discovery has led to an advance in laboratory furnaces which may assist in simplifying the production of continuous gum work."—*The Dental Record*.

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TO REPLACE A TOOTH ON VULCANITE OR CELLULOID PLATE.—Select a tooth with long and large headed pins. Drill a hole through the plate from the lingual surface to a point opposite the pins in the tooth when in proper position, and large enough to admit both pins. Note the point where the head of the pins touch after the tooth has been placed in position. Remove the tooth and with a wheel-bur cut small niches a little in advance of the point where the heads touch. Replace the tooth, and with a suitable instrument spread the pins apart and into the niches, which being a little in advance, will draw the tooth closely to the plate. Countersink the hole and fill it with amalgam.—*Morgan Adams, in The Archives of Dentistry*.

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AMALGAM FINISHER.—The process of finishing any plastic filling by a tape, or by any method which does not combine pressure with a system of working from the centre to the margin, is certain to cause a leaky filling, unless the material has reached its permanent and hardest stage before the treatment is applied. Any backward and forward motion, such as is necessary in polishing with a tape, is absolutely inadmissible on any freshly inserted plastic filling, and such treatment ensures certain failure. The writer of the note could not have tested the condition of any plug after being submitted to the treatment he recommends.—*Thomas Fletcher, in British Journal of Dental Science*.

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ONE OF the most entertaining of our exchanges is *The Doctor*, published at 36 East Fourteenth Street, New York City. It is well edited, contains a vast amount of medical news, served in a spicy way, and enough of the humorous to tickle any old medical cynic.

THE CHIEF difference between the savage and the civilized man is in the power and the habit of self-control. The savage may be master over other savages, but his own feelings he never masters, and their utterance he neither subdues nor regulates. Civilization, however, and experience teach men that both should be cultivated. Some of the emotions need development, some restraint—all need training. They are not all fit for utterance, nor of those that are, is it wise to give all unreservedly to the world.—*Church Union.*

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FILLED WITH WOE.—Mistress—Well Bridget, did you see the dentist? Biddy O'Galway—Yis, ma'am.

Mistress—Did he pull your tooth?

Biddy O'Galway—Sure, ma'am, he didn't lay a han' to it to pull at all. He scooped it out wid a wee hoe, an' thin he druv it in to stay feriver—wid a plug on the top o' it to kape it tight. I'll niver be caught doin' the likes ag'in ma'am. Vhat with him upsettin' the sate he put me in, and tyin' a dirty bit av an old gum shoe in me mouth fer a bib, an' making a noise the size o' a coffee-mill in my head, I'd laver walk the flure an' scrame.—*Puck.*

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WE DESIRE to draw the attention of our readers again to the value of an acidulated solution of bichloride of mercury: Distilled water, 1,000 parts; tartaric acid, 5 parts; bichloride of mercury, 1 part. Some experiments on microbes from saliva and the oral mucous membrane have shown that the addition of an acid renders the aqueous solution much more powerful and stable, as was first pointed out by La Place.—*The Dental Review.*

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AN ENGLISH PAPER says, Rochester, a comparatively small town in New York State, near the falls of the Genesee, and a few mile from Lake Ontario, has no fewer than seven observatories, the best known of which (one of some importance) is the Warner Observatory, under the direction of Dr. L. Swift.

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"WHICH is the aching tooth?" "This one," said the sufferer, as he pointed out the offender. "Ah, yes, I see; bicuspid." "What?" "Bicuspid." "I'll buy anything, doctor, if you'll only jerk the tooth out; though it looks a little mean to take advantage of a man in this fix. What are your darned cuspid's worth?"



## BOOK NOTICES.

A PRACTICAL TREATISE ON ARTIFICIAL CROWN AND BRIDGE-WORK. By George Evans. With 500 illustrations. Octavo, cloth, 258 pages. Price, \$3.00. Philadelphia: The S. S. White Dental Manufacturing Company, 1888.

Every dentist, sometime in his professional life, has longed for something to fill a "long felt want;" and every now and then some discerning author puts forth a book with just the right kind of information to fill the want to repletion. Artificial Crown and Bridge-Work is written and published just in the right time "to supply an admitted want in dental literature," and right nobly does it do it. The extensive scope of the manual can only be realized when it is considered that over forty methods of constructing artificial crowns and bridges are described and fully illustrated. It is a book that should be in the hands of every dentist.

The author, in his preface, truly says: "Properly practiced, it approaches a fine art; but misapprehension of the principles underlying it, lack of judgment in their application, and improper practice, have conspired to prevent its general acceptance by the profession, and it has, in consequence, been only partially endorsed or even wholly condemned, when a better understanding would have insured its hearty approval. Still, its possibilities are seen to be so great that at present no other branch of dentistry more engages the attention of practitioners, and in no other is a livelier interest, or a greater desire for real information, manifested."

## BOOKS RECEIVED.

FOOTPRINTS OF A PROFESSION, OR ETHICS IN MATERIALS AND METHODS. By Horatio C. Meriam, D. M. D., Salem, Mass. Second edition, revised and enlarged.

PAIN OBTUNDERS. By William Conrad, D. D. S., St. Louis, Mo. Reprint from *The Archives of Dentistry*.

A DESCRIPTIVE SKETCH OF CAMDEN, S. C. By W. S. Alexander and John W. Corbett.

IN ABSENTIA. By J. Foster Flagg, D. D. S., Philadelphia, Pa. A reply to remarks of Drs. E. T. Payne and E. A. Bogue before New York Odontological Society.

THE HIGHER EDUCATION A PUBLIC DUTY. An address delivered at the Commencement of the College of the City of New York, June 21, 1888, by J. Edward Simmons, LL. D.

BULLETIN OF THE AGRICULTURAL EXPERIMENT STATION. Cornell University, Ithaca, N. Y., Nos. I. and II.

PORCELAIN DENTAL ART. A process of restoring decayed and defective teeth. By C. H. Land, Detroit, Mich.

COCAINE AND COCAINE ADDICTION. By J. B. Mattison, M. D., Brooklyn, N. Y.

## DENTAL PATENTS.

ISSUED FOR THE QUARTER PRECEDING THE DATE OF THIS JOURNAL.

384,836—June 19, 1888.—ARTIFICIAL TOOTH.—Edward A. Floyd, Paola, Kansas.

384,863—June 19, 1888.—DENTAL TOOL.—James P. Morris, Paris, Texas.

385,142—June 26, 1888.—DENTAL PLATE.—James F. Sargent, Manchester, N. H.

- 385,236—June 26, 1888.—AUTOMATIC REGULATOR FOR VULCANIZING APPARATUS AND OTHER PURPOSES.—Oscar B. Brann, Portland, Me.
- 10,940 [Re-issue]—June 29, 1888.—ELECTRO-MAGNETIC DENTAL HAMMER AND PLUGGER.—Philip Helmer, Clinton, Iowa.
- 385,468—July 3, 1888.—DENTAL OPERATING CHAIR.—William D. Mayfield, Fort Worth, Texas.
- 385,718—July 10, 1888.—OPERATIVE DENTISTRY.—Charles H. Land, Detroit, Mich.
- 385,812—July 10, 1888.—DENTAL ENGINE.—William A. Knowles, Alameda, Cal.
- 386,476—July 24, 1888.—DENTAL ENGINE.—William A. Knowles, Alameda, Cal.
- 386,492—July 24, 1888.—DENTAL CABINET.—Joseph W. Penberthy, Minneapolis, Minn.
- 386,692—July 24, 1888.—PROCESS OF FILLING TEETH.—William A. Datt, Milwaukee, Wisconsin.
- 386,711—July 24, 1888.—DENTAL ARTICULATOR.—John L. P. Leman, Surbiton, Eng.
- 386,750—July 24, 1888.—DENTAL MIXING DISH.—Joseph A. Kimball, New York, N.Y.
- 387,581—August 7, 1888.—POLISHING DISKS FOR DENTISTS.—Levitt E. Custer, Dayton, Ohio.
- 387,655—August 14, 1888.—DENTAL PLUGGER.—Daniel D. Peabody, Stoneham, Mass.
- 388,200—August 21, 1888.—DENTAL ENGINE.—John Hood and Stephen H. Reynolds, Boston, Mass.
- 388,269—August 21, 1888.—ARTIFICIAL TOOTH.—Anson W. Day and Lester A. Rogers, Grand Rapids, Mich.
- 388,482—August 28, 1888.—DENTAL ELECTRIC APPARATUS.—Charles A. Eisenhart, York, Pa.
- 388,619—August 28, 1888.—DENTAL MATRIX.—Henry P. Booth, Chippewa Falls, Wis.
- 388,620—August 28, 1888.—DENTAL MATRIX.—Henry P. Booth, Chippewa Falls, Wis.

## A PRACTICAL TREATISE

ON

# Artificial Crown- and Bridge-Work.

BY GEORGE EVANS.

WITH 500 ILLUSTRATIONS.

OCTAVO. CLOTH. 258 pp. PRICE, \$3.00.

The author is well known as an ingenious expert in the field of which his volume treats, and as might be expected the work is eminently practical. But little space is given to theorizing upon disputed points, the main object of the writer being to tell, in as few words as will make his meaning clear, the best methods of procedure in Crown- and Bridge-work. To this end he has enlisted the engraver's art wherever a picture would tell the story graphically. The book is almost profusely illustrated, more than half the figures having been drawn by the author.

Much that is new in practical devices is here presented, together with what has been found valuable in the methods published by others in the dental journals.

To those interested in Crown- and Bridge-work (and who among dentists is not?) this volume will be indispensable, as within its covers are to be found plain, practical directions by which, by the exercise of a little ingenuity in adaptation, any suitable case can be treated. Sent by mail on receipt of the price.

# SECOND-HAND AND SHOP-WORN GOODS

## FOR SALE CHEAP.

### MISCELLANEOUS.

- One Lot Jarvis Separators. Will sell for 50 cents each.
- One Lot Johnston Bros. Reflectors, to attach to Rubber Dam Clamps, throwing light into cavities. List price, \$2.75; sell for \$1.00 each.
- One Pair Plate Benders, as shown on page 290 S. S. White's Catalogue. \$1.50.
- One Pair Pin Heading Forceps. \$1.50.
- One Lot Ross Polishing Powder, for polishing Rubber Plates. Put up in 1-pound boxes. Per box, 15 cents.
- One Lot Pin Racks, for Snow & Lewis' Automatic Points. Curved, to hold 18 points and square, to hold 24 points. Each, 50 cents.
- One Blake's Duct Compressor. \$1.50.
- Aluminum Solder, per  $\frac{1}{2}$  ounce, 50 cents.
- One Lot Bur Gauges, nicely Nickel-plated. Each, 25 cents.
- Plate Tooth Holders, to hold Teeth while grinding. Each, 10 cents.
- Blodgett's Tooth Wash. Per dozen, 25 cents.
- One Rolling Reclining Invalid Chair, in perfect order. Cost, \$36.00; sell for \$25.00.
- One Codman & Shurtleff Floss Holder. 25 cents.
- One Novelty Microscope. 50 cents.
- One Johnston Cone Journal Hand Piece, in perfect order. \$7.00.
- One Hodge Hand Piece. \$5.00.
- One Old Pattern Elliott Engine, with White's No. 4 Hand Piece. \$10.00.
- One Old Pattern Elliott Engine, with White's No. 4 Hand Piece, in good order. \$15.00.
- One B. D. M. Co. Lathe Head, with 6 Chucks, 2 Corundum Wheels, 1 Felt Wheel, and 1 Brush Wheel. Good order. \$6.00.
- One Glass Spirit Lamp. 25 cents.

### BUFFALO SHEET WAX.

A superior quality of sheet wax and gutta percha and wax, for base-plates, also gutta percha and wax, and pure wax in cakes for impressions. The trade supplied at satisfactory rates.

#### PRICES.

Sheet Wax, for base-plates, per half-pound box, . . . . .	50 cents.
Sheet Gutta Percha and Wax, for base-plates, per half-pound box, . . . . .	50 "
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## Another "NEW DEPARTURE."

### EDUCATE YOUR PATIENTS.

A SENSITIVE POINT will do this, if read by your patrons, thereby saving you valuable time and great annoyance. It is presented after thirty years' successful dental practice, to introduce a subject too much neglected by our profession. It answers questions, makes suggestions, and gives advice to our patients on matters relating to the teeth. Send 10 cents for the book—32 pages—and terms; 1,000 copies, neatly printed in your own name, free. *It will pay you to investigate this subject.*

CHAS. HOUGHTON, DENTIST, Batavia, N. Y.

# THE SNOW & LEWIS

## DOUBLE-END

### Automatic Plugger.

This instrument gives the backward, or pull, blow, as well as the ordinary direct, or thrust, blow. The mechanism of the Snow and Lewis Plugger, which is so well and favorably known, has been retained in the double-end pattern: the modifications required being very slight, and the new instrument will be found

Equal in Power and Effectiveness to the Original Pattern.

A few changes have been made in its outer form. The socket-piece has been shortened, and the small section of the case has now a hollowed outline, fitting the fingers and enabling them to grasp the instrument more securely. The necessary increase in length of the plugger is so slight that it will not be found an objection to its use as a direct-action instrument.

The force of the blow is regulated by turning the milled ferule on the "back action" end of the case, thus compressing the impelling spring.

The engravings show the instrument full size.

Plugger points for the old pattern of the Snow & Lewis Automatic are used in the direct end, and special curved points of approved shapes are used in the "back-action" end.

#### PRICES.

Snow & Lewis Double-End Automatic Plugger, . . \$9.00  
Back-action Points, per set of 12, . . . . . 5.25

#### PRICES FOR DIRECT-ACTION POINTS.

Snow & Lewis Plugger Points, per dozen, . . . . \$3.50  
Set "L" Auto. Plugger Pts., Nos. 1,2,3,5,6,7,13,14, ea. .50  
Set "L" Auto. Plugger Pts., Nos. 4,8,9,10,11,12, each, .75  
Set "L" Auto. Plugger Pts., per set of 13, . . . . . 8.50

Manufactured by the  
BUFFALO DENTAL MFG. CO.  
BUFFALO, N. Y.

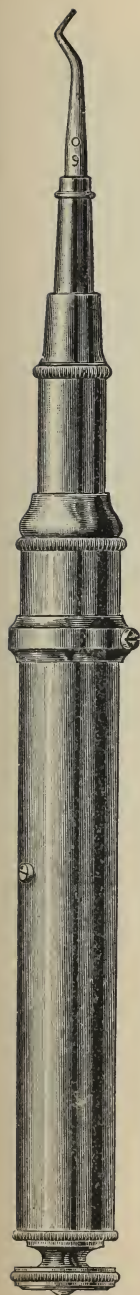


# THE SNOW & LEWIS

## AUTOMATIC · PLUGGER.

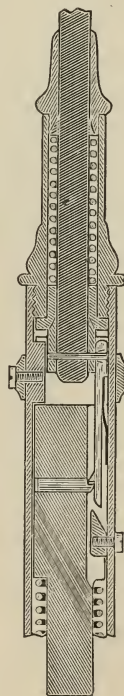
Patented October 24, 1865, October 30, November 20, 1866, June 23, 1868, and June 1, 1869.  
 Patent of October 30, 1866, re-issued August 22, 1876, February 2, 1880.

FOR TWENTY-THREE YEARS THE BEST KNOWN AND  
 MOST INDISPENSABLE ADJUNCT TO THE  
 DENTIST'S OPERATING CASE.



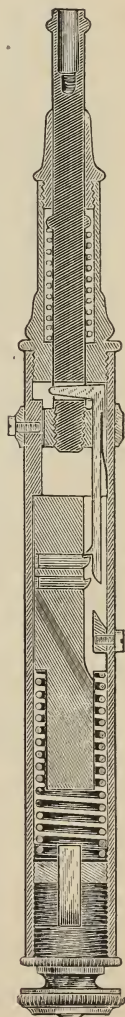
No. 2 Automatic Plugger has cone bearings and but one-eighth inch stroke.

SECTIONAL VIEW OF NO. 2 PLUGGER. [NEW STYLE.]



No. 1 Automatic Plugger can be adjusted to either one-eighth or one-quarter inch stroke.

SECTIONAL VIEW OF NO. 1 PLUGGER.



### PRICES.

Automatic Plugger, triple Gilt, Nos. 1 or 2, . . . . .	\$12.00
Automatic Plugger, Silver or Nickel-plated, . . . . .	8.00
Snow & Lewis Plugger Points, per dozen, . . . . .	3.50
Set "L" Auto. Plugger Pts., Nos. 1,2,3,5,6,7,13,14, ea. . . . .	.50
Set "L" Auto. Plugger Pts., Nos. 4,8,9,10,11,12, each, . . . . .	.75
Set "L" Auto. Plugger Pts., per set of 13, . . . . .	8.50
Morocco Case, with Point Rack, . . . . .	3.50

Points of any desired pattern furnished to order.

THE SNOW AND LEWIS

## • AUTOMATIC • PLUGGER •



This instrument has been in use since 1865, and it stands as well in favor at present as it has at any time since its introduction. It was the first successful spring plugger brought to public notice, and nothing has been offered in the market since its first appearance which compares with it for efficiency. The best proof of its excellence and the public appreciation of it is found in the constantly increasing demand for it, it having sold more largely in 1887 than in any previous year.

Its mechanism is easily understood by reference to the sectional engraving. The hammer is impelled by a spiral spring, the tension of which is altered by turning the knob at the end of the instrument. The pressure of the spring is received by a projection on the inside of the case, upon which the hammer rests. The socket-piece, or tool-holder, slides longitudinally in bearings in the smaller section of the case, and is pushed outwardly by a spiral spring. A spring-catch is connected to the inner end of the socket-piece at one end, while its free end engages with one of the catches on the hammer. An inclined plane, fastened to the inside of the casing, serves to raise the spring-catch and disengage the hammer at the proper time.

When the instrument is pressed against a resisting object, as a filling, for instance, the case slides over the socket-piece, compressing both the spiral springs; the spring-catch holding the hammer at the same relative distance from the end of the socket-piece that is shown in the cut. The spring-catch is finally disengaged by the inclined plane, and the hammer is allowed to descend upon the end of the tool-holder. When the pressure upon the instrument is released, the recoil of the tool-holder spring throws the parts into their original positions, thus gaining distance between the hammer and tool-holder for another blow.

It will be observed that there are two catches on the hammer in the full-length sectional engraving. If the socket-piece is arrested in its outward movement, so as to engage the spring-catch with the second catch on the hammer, the hammer will only fall half the distance that it would if the first catch of the hammer were engaged, and the blow will be correspondingly lighter.

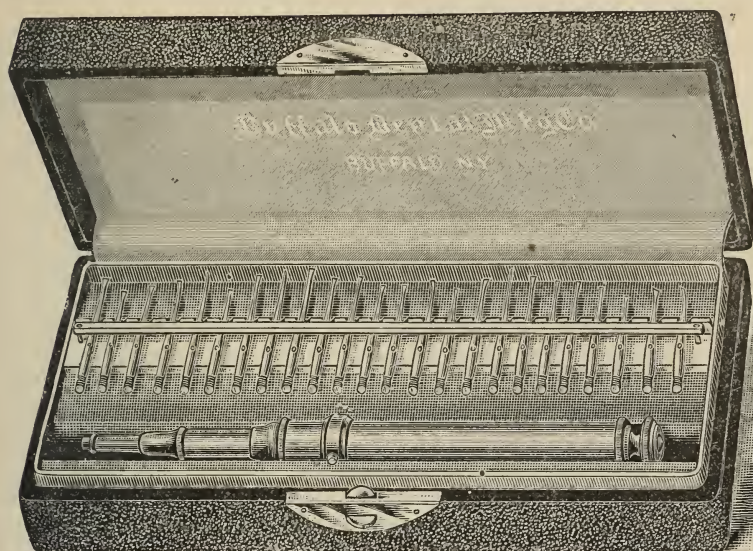
This effect is produced by turning the ring on the outside of the plugger case to the right just after a blow has been struck, and before the tool-holder has been thrown out by its spring. The screw, which is fastened in the ring, projects into the case; and when the ring is turned, it prevents the socket-piece from passing outwards to its full extent, by its coming in contact with the collar on its inner end.

The foregoing description applies to the "No. 1," or old style plugger. The "New Style" plugger, which is also shown in section, differs from the other in having two taper collars on the tool-holder, by which all lateral play between it and the bushings through which it slides, is taken up. The point of the instrument is thus steadied, and can be placed upon the filling with the same exactitude as can be an old-fashioned hand plugger.

It will be observed that the hammer has but one catch. This is because the collars on the tool-holder must always be brought against the bushings, which are countersunk for their reception, and any alteration of the length of stroke of the tool-holder is therefore inadmissible.

The following claims are made for this instrument: It is as strong and substantial as can be made, and is not likely to get out of order. The expense of repairs, if necessary, is very small. The durability is such, that the first made, over twenty years ago, are still in use. Its blow is the most effective of any instrument of its kind. In fact, the "blow of the Snow and Lewis Plugger" is often mentioned as the standard for comparison when other mallet devices are tested. The best that is ever said of them is that the blow is equal to the "Snow and Lewis." No claim is made to superiority over it.

# MOROCCO CASE for the SNOW & LEWIS AUTOMATIC PLUGGER.



## NEW PATTERN OF POINT RACK.

FROM this date, January 1, 1888, the Hayes Rack will be discarded as an adjunct to the Morocco Case for the Snow & Lewis Automatic Plugger, and the Pin Rack will be substituted therefor. The Pin Rack was originally manufactured by The Buffalo Dental Manufacturing Company about twenty years ago. In its original form it was objectionable from the ease with which the points were dislodged from the pins. This difficulty is now obviated by the use of a retaining bar, which presses upon the points, rendering their accidental displacement impossible. As the bar is held down by light springs, it is easily raised when it is desired to remove a point from the rack, or to return one.

The new Morocco Case will be of the same dimensions as the former one, but will hold twenty-four points instead of eighteen.

## PRICES.

Snow & Lewis Automatic Plugger, Silver or Nickel Plated, with Morocco Case and 24 Plugger points, . . . . .	\$18.50
Morocco Case, with rack to hold 24 points, . . . . .	3.50

## STEAM GAUGES FOR VULCANIZERS.



We have a small, neatly made Steam Gauge, as well made and reliable as any steam gauge, having pressure and temperature both indicated upon the dial. The case is three inches diameter.

PRICE—Each, with coil pipe for connection, \$5.00.

BUFFALO DENTAL MFG. CO.

## Endless Vulcanizer Packing.

There has been some demand for an endless packing for the Whitney Vulcanizer; and we have at last succeeded in obtaining some, equal in quality and similar in structure to the packing strips commonly used.

There are rubber rings sold as endless packing, which are wholly unsuitable for the purpose. These can be relied upon as a good article. Price, 8 cents each.



# - BOSWELL - DOUBLE-END SPATULA

FOR MIXING  
Plastic Filling Material.

---

SUGGESTED BY DR. H. H. BOSWELL.

---

This Spatula, suggested by an expert in crown and bridge work, is intended to be used where large quantities of oxy-phosphates are to be mixed at one time for cementing bridge work into position. Its value for the purpose has been recognized by those who have mixed with a small spatula.

The instrument has two blades of finely tempered and polished steel, and is nickel-plated: one broad, thin and elastic, for quickly and thoroughly mixing the ingredients of the zinc plastic on a slab; the other is narrow and slightly stiffer, for manipulating the mixture after it is formed.

It may also be of service as a bench tool for mixing small quantities of plaster for investments. The engraving shows the instrument nearly full size.

## PRICE.

Double-End Spatula, . . . . . 70 cents.

---

— AN EXCELLENT CEMENT —

FOR

CROWN AND BRIDGE WORK:

FLETCHER

— DENTAL —

PORCELAIN CEMENT No. 2.

---

PRICE — Porcelain Cement No. 2, per packet, \$1.50.



# “Painless . Dentistry.”

A TWO-OUNCE BOTTLE OF

## BARR'S · LOCAL · ANAESTHETIC

mailed postage paid to any address in the United States for \$1.00, and guaranteed to make teeth extracting painless, or money refunded, by

**DR. E. T. BARR,**

Manufacturer and Proprietor, BOWLING GREEN, KY.

---

### TESTIMONIALS.

“I find your ‘Anæsthetic’ all you claim for it.”—*Dr. R. M. Baker, Richfield, Ill.*

“I would say you certainly have a wonderful article, and in my hands it has proven a genuine success.”—*Dr. A. H. Lee, Washington, D. C.*

“I find your ‘Anæsthetic’ to be the best I have ever used, although I have already had five others before getting yours.”—*Dr. O. W. Baker, Booth Bay, Me.*

“It affords me pleasure to recommend your ‘Anæsthetic.’”—*Dr. H. M. Oviatt, Wyocena, Wis.*

“I have used all the ‘Local Anæsthetics’ that have ever been on the market for extracting teeth, and I find yours superior to them all.”—*Dr. J. H. Thomas, Crookston, Minn.*

“I have tried your ‘Anæsthetic’ until I am satisfied it will do what you claim for it.”—*Dr. Thos. M. Talbott, Washington, D. C.*

“I am pleased to say your Anæsthetic has given entire satisfaction in every case I have applied it.”—*Dr. T. H. Holden, Winnemucca, Nev.*

“I have given your ‘Anæsthetic’ a fair test and find it acts like a charm.”—*Dr. J. E. Breeding, San Diego, Cal.*

“Your ‘Anæsthetic’ has proven quite a success in my office.”—*Dr. E. Knapp, Evansville, Ind.*

“I think your obtunder the best I have ever used for the purpose set forth.”—*Dr. E. F. Wilson, Rochester, N. Y.*

“This makes the second bottle of your ‘Anæsthetic’ I have used and I am perfectly charmed with it.”—*Dr. Starr Parsons, Washington, D. C.*

“I have given your Anæsthetic a fair test and am convinced it will do all you claim for it.”—*Dr. W. W. Lazear, 2208 Wabash Avenue, Chicago, Ill.*

“I am now using the second bottle of your ‘Anæsthetic,’ which I find a convenient and useful article in my practice.”—*Dr. J. A. Kimball, 28 W. Twenty-sixth Street, New York City.*

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**DIRECTIONS.**—Dry the gums thoroughly, then apply the “Anæsthetic” to the gums with a pledget of cotton around the tooth to be extracted, let remain one minute, then instantly remove the tooth.

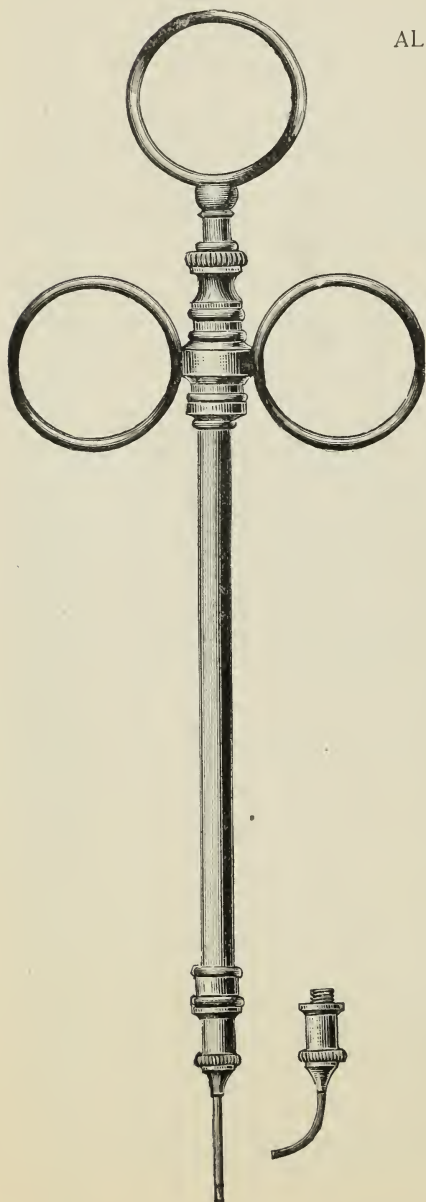
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For Sale by **BUFFALO DENTAL MANUFACTURING CO.**

# • LEWIS • ABSCESS • SYRINGE •

FOR TREATMENT OF

ALVEOLAR ABSCESS, PYORRHOEA  
ALVEOLARIS, AND THE  
IMMEDIATE RESOLUTION OF  
PERIODONTITIS  
AND INCIPIENT ALVEOLAR  
ABSCESS.



This syringe is so constructed that it can be filled and operated with one hand. The movement of the piston is but one-quarter of an inch, thereby taking up the desired quantity of fluid and no more.

The capacity of the syringe is so small (a few drops only) that it obviates the annoyance of cauterizing the inside of the mouth when using creosote or other strong medicines.

If the opening into the tooth or pulp canal is made to fit the syringe point, the whole contents of the syringe can be discharged into the pulp canal and through the apical foramen and into the fistulous sinus, thoroughly medicating the diseased tract without allowing any of the preparation used to escape into the mouth to cause annoyance to the patient.

In the same manner a few drops of the appropriate remedy may be placed in the pocket between the root and the gum in a case of pyorrhœa alveolaris.

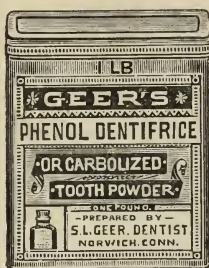
The small amount of fluid contained in this syringe can be pumped back and forth during its application to the tooth or gum-pocket, keeping it in active circulation and insuring its penetration to every part of the diseased tract.

This syringe is almost indispensable in the treatment of inflamed and abscessed roots by the exhibition of Peroxide of Hydrogen and Mercuric Chloride, and it is more extensively used for this purpose, perhaps, than for any other. The fact has been established, by the repeated success of this treatment, that periodontitis may be reduced in an hour or two, and alveolar abscess aborted.

Full directions accompany each syringe for its use in cases of the nature described above.

## PRICE.

Lewis Abscess Syringe, with two  
gold points, . . . . . \$3.50



## Phenol \* Dentifrice

OR

### CARBOLIZED TOOTH POWDER.

To maintain the health of the **Mouth** and preserve the freshness and beauty of the **Teeth**, the frequent use of a dentifrice becomes indispensable. It is important to obtain an article free from obnoxious ingredients, the presence of which would surely cause numerous troubles, the origin of which is unsuspected.

The proprietor of Phenol Dentifrice recommends it to the notice of those not already acquainted with its long established merits. This preparation, which has been in the highest repute since its introduction in 1870, and sold to the **dental profession** throughout the **United States** by the leading **Dental Depots**, is a scientific combination of the finest materials, so united, chemically, as to insure the greatest efficiency and the best possible results upon the **MOUTH, TEETH and GUMS**.

The excellence of this Dentifrice, the formula of which originated with the proprietor, a dentist of thirty years' practice, has obtained for it the strongest recommendation of many of the professors in our **DENTAL COLLEGES**, as well as from those most noted in private dental practice.

As a **TOOTH POWDER** for General Use, by Old and Young, it stands Unrivalled.

**\$1.00 PER LB., IN 4, 1, ½ & ¼-LB. CANS**

SOLD BY BUFFALO DENTAL MANUFACTURING COMPANY,

WHOLESALE AND RETAIL

# • FLETCHER'S • AMALGAMS •

• MANUFACTURED • BY •

THOS. FLETCHER, F. C. S., WARRINGTON, ENG.



THE METALS USED IN FLETCHER'S AMALGAMS ARE REDUCED DIRECT FROM THEIR SALTS, AND ARE CHEMICALLY PURE. "COMMERCIALLY PURE" METALS ARE NEVER USED. THEY ARE THE ONLY ALLOYS WHICH ARE AND HAVE BEEN, FROM THE FIRST, TESTED INGOT BY INGOT FOR ALL NECESSARY PROPERTIES, AND THEIR UNIFORMITY ABSOLUTELY GUARANTEED. UNTIL THE INTRODUCTION OF THESE ALLOYS, AMALGAMS NEVER WERE TESTED FOR ANY PROPERTIES. THESE AMALGAMS ARE STRICTLY FIRST-CLASS, AND GUARANTEED AS REPRESENTED IN EVERY PARTICULAR. \* \* \* \* \*

## FLETCHER'S PLATINUM AMALGAM

PLATINUM AND GOLD ALLOY, \$4.80 PER OZ.

IS REMARKABLY FREE FROM DISCOLORATION IF FINISHED AND POLISHED. PRODUCES PLUGS ABSOLUTELY MOISTURE TIGHT. DOES NOT DISCOLOR THE TOOTH SUBSTANCE, AND MAY BE RELIED UPON AS A THOROUGHLY TRUSTWORTHY FILLING MATERIAL. REQUIRES A VERY SMALL PROPORTION OF MERCURY.



JAMES V. LEWIS,

GENERAL WHOLESALE AGENT FOR  
FLETCHER'S FILLING MATERIALS  
FOR THE UNITED STATES,

No. 15, COURT STREET,

BUFFALO, N. Y.

## Extra Plastic Amalgam.

AN ADHESIVE VARIETY OF THE PLATINUM AMALGAM,  
\$5.00 PER OZ.

A SMOOTH, EXTREMELY PLASTIC VARIETY, DESIGNED FOR USE IN POSITIONS WHERE THOROUGH PLUGGING IS A MATTER OF DIFFICULTY. IT IS LARGELY USED IN CONNECTION WITH THE ARTIFICIAL DENTINE FOR THE APPARENTLY MOST HOPELESS CASES. FREE FROM DISCOLORATION.

FOR SALE BY BUFFALO DENTAL MANUFACTURING COMPANY.



# CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.

....



<b>GRAY.</b>	<b>YELLOW.</b>	<b>LIQUID.</b>	<b>MEDIUM.</b>	<b>LIGHT.</b>
FOUR COLORS and LIQUID.—Gray, Yellow, Medium and Light, . . \$2.00 per package.				
TWO COLORS and LIQUID.—Gray and Yellow, . . . . . 1.50 " "				
ONE COLOR and LIQUID.—Gray, Yellow, Medium, Light or Gum, 1.00 " "				

**THIS COMPOUND STANDS WITHOUT A RIVAL.** Used for TEN years by Leading Dentists throughout the world.

**DIAMOND CEMENT** should not be classed with the so-called oxy-phosphates, as is often the case—the materials of which it is composed and its process of manufacture being entirely different—hence its **Superiority**.

**IT HARDENS IN WATER OR SALIVA.**—Two or more colors blended together (in mixing) will produce any shade desired.

## • • CAULK'S • PAR • EXCELLENCE • ALLOY • •

This Gold and Platina Alloy is manufactured on a new principle. Saves teeth where others fail.

It is the result of a long series of experiments, and has been in constant use for TEN years. By our NEW METHOD of manufacture there is no GUESS WORK, the molecular change is controlled, making each and every ingot always and absolutely alike in its properties.

PRICE, in 1-3, 1-2 and 1 oz. packages, per oz., \$3.00; 2 oz., \$5.00.

## • • CAULK'S • WHITE • ALLOY • •

Has been greatly improved. There is nothing equal or superior to it. Is of a peculiar grayish-white color. When properly manipulated with our Purified Mercury it will retain its color under all circumstances.

PRICE, in 1-4, 1-2 and 1 oz. packages, per oz., \$4.00; 2 oz., \$7.00.

## CAULK'S • DIAMOND • POINT • STOPPING • and • GUTTA-PERCHA • • POINTS • FOR • FILLING • ROOTS • •

PRICE, in 1-8, 1-4, 1-2 and 1 oz. packages, per oz., (reduced to) \$2.00.

All of Caulk's Filling Materials are sold by Troy Weight and sent by Mail.

**OVER FIFTEEN THOUSAND** Dentists are using these materials throughout the world. What better evidence do you wish of their Superiority and Excellence.

**Orders for DENTAL SUPPLIES will receive prompt attention.**

**L. D. CAULK, Manufacturer,**

Laboratory, - - - CAMDEN, Delaware.

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

# R. S. WILLIAMS,

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MANUFACTURER OF

STANDARD COHESIVE GOLD FOIL,  
STANDARD MEDIUM GOLD FOIL,  
STANDARD SOFT GOLD FOIL,  
STANDARD CORRUGATED GOLD FOIL,  
STANDARD CRYSTAL SURFACE GOLD (Rolled),  
STANDARD UNTRIMMED GOLD FOIL (Cohesive),  
STANDARD UNTRIMMED GOLD FOIL (Soft).

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## STANDARD • GOLD • CYLINDERS.

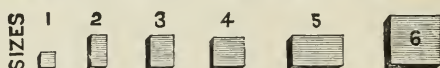
Styles A, B, and C.



NON-TIPPING GOLD CYLINDERS (Cohesive),  
NON-TIPPING GOLD CYLINDERS (Soft),  
BURNISH GOLD CYLINDERS (Cohesive),  
BURNISH GOLD CYLINDERS (Soft).

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## RECTANGULAR • GOLD • PELLETS.



NON-TIPPING GOLD BLOCKS,  
FOLDED GOLD FOIL,  
GOLD and PLATINA, for Filling (Folds and Rolled).

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ELECTRIC GOLD, (Cohesive)—Always Reliable.

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STANDARD TIN FOIL and CYLINDERS,  
GOLD LIGATURE WIRE,  
AMALGAM ALLOY No. 1.

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GOLD PLATE, SOLDERS, WIRE, Etc.,  
PLATINA PLATE and WIRE (Hard and Soft),

FOR CROWN AND BRIDGE WORK.

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115 WEST 42<sup>D</sup> ST., NEW YORK CITY.

[ja88-1y]

# New · Specialties · in · Gold FOR FILLING.

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· · · · ·

## SOFT · BURNISH · GOLD · CYLINDERS.

---



Sizes,  $\frac{1}{2}$ , 1, 2, 3, and assorted.

These cylinders are made with particular reference to the new system of packing gold with engine burnishers.

They also have excellent qualities for use with Mallet or Hand Pluggers.

A prominent New York operator says: "As a soft gold they surpass anything I ever used."

## · COHESIVE · BURNISH · GOLD · CYLINDERS ·

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Sizes,  $\frac{1}{2}$ , 1, 2, 3, and assorted.

Are similar to the above, but are *fully Cohesive*. They also have the quality of toughness, so the *plugger point carries the gold before it* instead of cutting through. It is claimed for them that they possess, in the highest degree so far known, the

---

MAXIMUM OF COHESION WITH THE . . MAXIMUM OF SOFTNESS AND TOUGHNESS

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· · · · ·

It is believed these two varieties of Burnish Gold Cylinders possess such desirable and hitherto unobtained working properties, that they are well worth a trial by all first-class operators.

\$4.50 per  $\frac{1}{8}$  oz.—\$17.50 per  $\frac{1}{2}$  oz.

For Sale by  
B. D. M. CO.

**R. S. WILLIAMS,**  
No. 115 WEST 42d STREET,

NEW YORK  
CITY.

# BROWN'S Mounted Granite Wheels AND DISKS.

The Wheels A, G, H, J, K, L, will fit the Niagara Lathe Head, as made by the B. D. M. Co. If used with the split chuck (price, 10 cents,) they will fit the B. D. M. Co.'s Lathe Head.

By means of chuck No. 8 (price, \$1.50,) Brown's Disks and Points, Nos. 1, 2, 3, 4, 5 and 6, can also be used in the B. D. M. Co.'s Lathe Head, as can all instruments made for No. 4 Engine Hand Piece.

## AKRON DENTAL RUBBER.

The material of which this Rubber is composed is prepared by a new process, which insures

**ABSOLUTE PURITY,**  
RESULTING IN A PRODUCT OF  
WONDERFUL  
**DENSITY, FINENESS AND STRENGTH.**

It is especially designed to meet the requirements of those who seek to produce the most perfect and artistic work. It is exceedingly tough and light, and takes a beautiful polish. Plates may be made very thin without splitting or crumbling away about the edges. It can be used with the best results for making

**PARTIAL LOWER DENTURES,**  
an advantage which no other rubber possesses. It has the unqualified approbation and endorsement of the profession everywhere, and never fails to give satisfaction.

PRICE, \$3.00 PER POUND.

For Sale by BUFFALO DENTAL MFG. CO.

# MERCURY . . .



Re-Distilled.

The purer the Mercury used in preparing amalgam, the greater the assurance of a successful operation.

• The B. D. M. CO'S •  
Re-Distilled • Mercury

IS AS PURE AS CAN BE  
PROCURED.

PRICE PER BOTTLE, . . . 40 CENTS.

THE TRADE SUPPLIED.

## REDUCTION IN PRICE. FLETCHER'S Cutt-a-Percha • Hydraulic CEMENT.

Price Per Cake, . . . \$1.00



After Forty years' experience in the preparation of more than One Hundred Thousand applications for patents in the United States and Foreign countries, the publishers of the Scientific American continue to act as solicitors for patents, caveats, trade-marks, copyrights, etc., for the United States, and to obtain patents in Canada, England, France, Germany, and all other countries. Their experience is unequalled and their facilities are unsurpassed.

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# NOTICE

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## ANY SUBSCRIBER,

Either New or Old, who sends us \$3.75, Cash, will get

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# THE DENTAL REGISTER

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FOR THE YEAR 1888,

— AND IN ADDITION A COPY OF —

DR. STOWELL'S

## Atlas of the Microscopic Anatomy of the Human Teeth.

CONTAINING 64 CUTS,

REPRESENTING EVERY TISSUE OF THE TEETH. UNDER HIGH MAGNIFICATION, SOME OF THESE ARE AS HIGH AS ONE THOUSAND DIAMETERS, AND ARE SO PLAIN THAT ANYONE CAN UNDERSTAND PERFECTLY ALL THESE STRUCTURES WITHOUT THE AID OF A MICROSCOPE.

Dr. Stowell's reputation is sufficient to give all the recommendation necessary as to the accuracy of the work; to say it is absolutely perfect is no exaggeration.

The work shows in beautiful form (in addition to Dr. Stowell's work) a number of abnormal teeth from Dr. J. Taft's collection. It is printed on the best of paper and bound in morocco.

The atlas is in the form of a portfolio, measuring 12x16 inches; some of the anatomical cuts measuring thirteen inches in length. Each cut accompanied with ample description.

SEND YOUR SUBSCRIPTION FOR THE  
"REGISTER" AND YOU WILL RECEIVE  
IN ADDITION TO THE "REGISTER" A  
COPY OF THIS SUPERB WORK. - - -

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**SAMUEL A. CROCKER & CO.,**  
OHIO·DENTAL·AND·SURGICAL·DEPOT,  
117, 119 and 121 WEST FIFTH ST., CINCINNATI, Ohio.

# KING'S OCCIDENTAL AMALGAM.

PRICE REDUCED TO \$3.00 PER OZ.

This Amalgam has been before the profession in Ohio and Western Pennsylvania for some years, and all who have used or tested it agree that it has merits over any other Amalgam in the market.

The process of manufacture differs from that of other Amalgams, and

## BY A NEW INVENTION

Dr. King is enabled to obtain better results, both in regard to COLOR, SHRINKAGE, and EXPANSION, than is obtained in any other alloy in the market.

Test for color consists of sixty grains of Sulphuret of Potassa, dissolved in one ounce of water. Amalgam plugs to be left in this solution twenty-four hours or more. The Occidental will remain bright after this test, and we know of no other Amalgam, at even double the price, but that will discolor. All who would use the best should buy

## KING'S OCCIDENTAL AMALGAM.

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### TESTIMONIALS.

I believe the Occidental Amalgam has *no equal* in the market to-day.

PITTSBURGH, September 22, 1881.

GALE FRENCH, D. D. S.

I think the Occidental Amalgam superior to any I have ever used.

PITTSBURGH, September 22, 1881.

J. G. TEMPLETON, D. D. S.

ASK YOUR DENTAL DEPOT FOR IT, OR SEND TO

**RANSOM & RANDOLPH, Wholesale Agents,  
83 JEFFERSON STREET, TOLEDO, OHIO.**

FOR SALE BY BUFFALO DENTAL MANUFACTURING CO.

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Give us your Subscription now for 1888.

## OHIO JOURNAL OF DENTAL SCIENCE.

*A Monthly Journal of 48 to 56 pages, for Two Dollars per Year.*

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THE '88 VOLUME WILL BE FILLED WITH MATERIAL FROM THE PENS OF THE BEST MEN IN THE PROFESSION, COMPRISING ARTICLES BOTH PRACTICAL AND SCIENTIFIC. THE JANUARY NUMBER WILL CONTAIN AN EXCELLENT PORTRAIT OF THE VENERABLE EDITOR AND BIOGRAPHICAL SKETCH BY PROFESSOR J. TAFT.

Editor: GEO. WATT, M. D., D. D. S., Xenia, Ohio.

PUBLISHED BY

**RANSOM & RANDOLPH,  
TOLEDO, OHIO,**

[ja88-1y]

Subscriptions received by BUFFALO DENTAL MANUFACTURING CO.

# IF YOU WANT

FORCEPS—CORRECTLY MADE,  
EXCAVATORS—KEEN CUTTING AND WELL TEMPERED,  
PLUGGERS—ALL KINDS, FINELY SERRATED,  
AMALGAM INSTRUMENTS—EVERY KIND,  
BONWILL ENGINE PLUGGER POINTS,  
ELECTRIC MALLET PLUGGERS,  
AUTOMATIC PLUGGER POINTS PROPERLY FITTED,  
ENAMEL CHISELS THAT WILL DO THEIR WORK,  
RUBBER DAM FORCEPS AS THEY SHOULD BE,  
FOIL CARRIERS—ALL KINDS,  
ENGINE BURS—BEST QUALITY, OR  
REPAIRING CAREFULLY ATTENDED TO,

SEND TO

## LUKENS & WHITTINGTON,

**DENTAL INSTRUMENT MANUFACTURERS.**

626 RACE STREET, - - PHILADELPHIA, PA.

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See Advertisement of Our . . . . .

## NEW • DENTAL • LATHE

THE FASTEST SELLING LATHE IN THE  
MARKET. EVERYBODY LIKES IT.

Complete, only \$11.00

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## Low's Counter-Irritant Dental Plasters.

The application of counter-irritants to the gum, in the form of a plaster, has some advantages over the ginger or pepper bag, as the plaster can be made to adhere to the gum, and is less bulky. It will, therefore, easily retain its place, and the effect will be more prompt and certain, the action of the remedies not being interfered with by a constant wash of saliva.

It is questionable if one degree of stimulation should be expected to answer the purpose equally well for all stages of pericemental inflammation, and in order to meet the varying indications which are presented, three different plasters have been devised, as follows:

PLASTER No. 1 is a very mild stimulant, suitable rather for warding off threatened inflammation, than for reducing it when present. It is recommended for use after filling pulpless teeth or setting artificial crowns.

PLASTER No. 2 is a more rapid stimulant, composed of capsicum, and is applicable to all cases when it is desired to bring about resolution instead of hastening suppuration.

PLASTER No. 3 is a Mustard Paste, and is by far the best application when suppuration is inevitable and the desire is to hasten the discharge and relieve the patient.

Each bunch of six plasters is wrapped in tin-foil to prevent deterioration by exposure to the air, making a convenient package for the patient.

They are put up in boxes containing nine dozen of either kind or assorted. Price, \$1.00 per box

Prepared by DR. F. W. LOW, Buffalo, N. Y.

BUFFALO DENTAL MFG. CO., General Wholesale Agents.

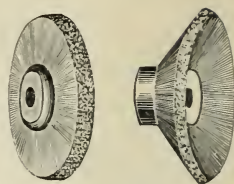
# TOOTH \* BRUSH \* WHEELS.

WITH METAL CENTER.

Endorsed by Dr. J. H. McKELLOPS,

ST. LOUIS, MO.

Made in two shapes—Straight and Concave—of Pure Hair.



PRICES:	No. 0, soft straight, . . . . .	} 25 cents each.
	No. ½, stiff straight, . . . . .	
	No. 00, soft concave, . . . . .	
	No. ¼, stiff concave, . . . . .	

BUFFALO DENTAL MANUFACTURING CO.

## BROACH \* HOLDERS!



Bone handle, German silver trimming. A very neat instrument for the purpose. A split socket and clamping nut holds the broach firmly, while it is readily removed, if desired.

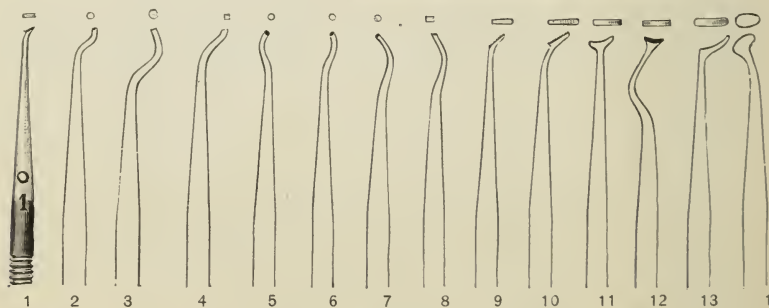
Price, only - - - 10 cents.

## SET "L"

A NEW SET OF SHORT POINTS FOR THE

Patented August 22, 1876.

SNOW & LEWIS AUTOMATIC PLUGGER



PRICES SET "L" AUTOMATIC PLUGGER POINTS.

Nos. 1, 2, 3, 5, 6, 7, 13, 14, each, . . . . .	\$0.50
Nos. 4, 8, 9, 10, 11, 12, each, . . . . .	.75
Per set of 14, . . . . .	8.50
Snow & Lewis or Abbott Automatic Plugger Points, per doz., . . . . .	3.50



# SAMSON RUBBER

The Strongest and Most Uniform Rubber Manufactured.

TRADE MARK,  
No. 3788.



Registered  
June 20th, 1876.

## PRICE LIST OF DENTAL RUBBERS AND GUTTA PERCHA.

No. 1 Rubber, per lb.,	.....	\$2.25
No. 2 Rubber, “	.....	2.25
Black Rubber, “	.....	2.25
Gutta Percha for Base Plate, per lb.,	.....	2.25
Less than 10 lbs., per lb.,	.....	\$2.25
In 10 lb. lots,	.....	2.00
In 25 lb. lots, per lb.,	.....	\$1.90
In 50 lb. lots,	.....	1.75
Samson Rubber, per lb.,	.....	\$2.75
Maroon Rubber, “	.....	2.75
Flexible or Palate Rubber, per lb.,	.....	2.75
Vulcanite Gutta Percha, “	.....	2.75
Less than 10 lbs., per lb.,	.....	\$2.75
In 10 lb. lots,	.....	2.25
In 25 lb. lots, per lb.,	.....	\$2.00
In 50 lb. lots, “	.....	1.80
No. 1 Weighted Rubber, mixed with Pure Metal, per lb.,	.....	\$4.00
No. 2 Weighted Rubber, “ “ “ “	.....	4.00
Black Weighted Rubber, “ “ “ “	.....	4.00
Weighted Gutta Percha, per lb.,	.....	4.00

Adamantine Filling or Stopping.

THESE Rubbers being made from carefully selected Para Gum, and manufactured by improved processes, I can guarantee them to give entire satisfaction to the user and retain a high polish.

FOR ANY FURTHER INFORMATION, ADDRESS

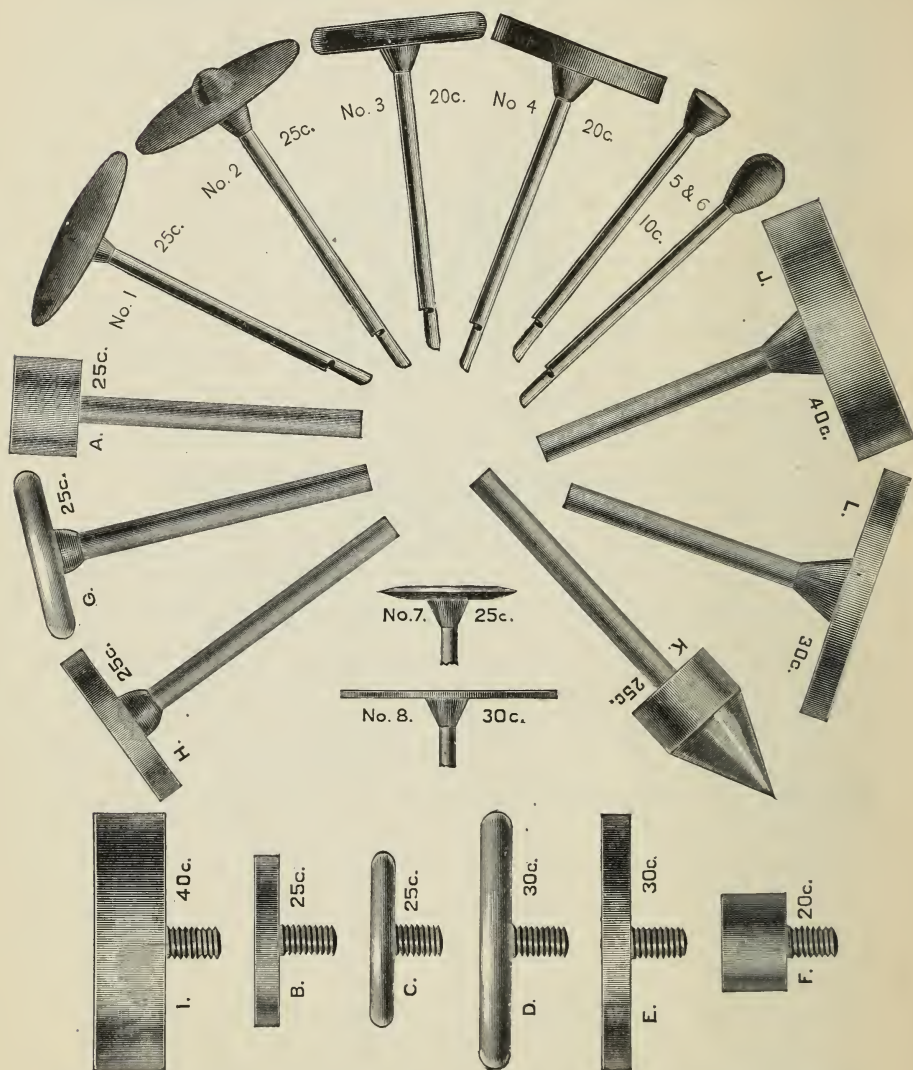
**EUGENE · DOHERTY,**

110 and 112 Kent Avenue, Corner North Eighth Street,  
BROOKLYN, E. D., N. Y.

FOR SALE BY THE BUFFALO DENTAL MANUFACTURING COMPANY.

# BROWN'S MOUNTED GRANITE DISKS,

For Dentists, Jewelers, Machinists, Die Sinkers, &c. (Patent applied for.)



THE above cuts represent a portion of the sizes and shapes of **Brown's Granite Disks**, which are made and mounted in one and the same operation of the best sapphire corundum, in the grades Fine, Medium and Coarse. Nos. 1 to 8 fit the Dental Engine Hand Piece. I also mount any of the others on the D. E. Shaft when ordered. Those designated by letters are used on a Lathe Head with screw or universal chuck for fitting teeth and doing all sorts of small grinding for Jewelers, Machinists, etc., very handily.

Upon the receipt of **TWO DOLLARS** I will send as samples, postage free, three dollars' worth at list prices, of any of the numbers which may be selected to that amount, in a mailing box which transports them with perfect safety. Try them.

*Please remit P. O. order or note.*

**Address, B. S. BROWN, Hyde Park, Mass.**

# FLETCHER

## DENTAL

# PORCELAIN CEMENT No. 2.

THE FLETCHER DENTAL PORCELAIN CEMENT that was placed on the market some ten years ago was one of the pioneer phosphate cements, and proved such a good filling material that it was with great reluctance withdrawn from market, owing entirely to the crystallizing of the paste or fluid, in this country.

The demand for a good, reliable zinc-phosphate led to further experiments, and the PORCELAIN CEMENT No. 2 is the result. This cement is now offered with the assurance that the fluid will not crystallize; a quantity having been under test for nearly a year has remained perfectly fluid, and has proved a satisfactory filling material in every particular.

Besides the usual operations in the mouth requiring a good cement, the Porcelain Cement No. 2 is highly recommended for cementing crowns and bridge work to place.

PRICE—Porcelain Cement No. 2, per packet, \$1.50

## PINK JOINT CEMENT

### FOR ARTIFICIAL WORK.

Attention is called to this cement for preventing rubber from showing in the joints between blocks in artificial teeth. If the directions are followed, this unsightly blemish will be entirely overcome. This Cement is made from the original Fletcher Dental Porcelain.

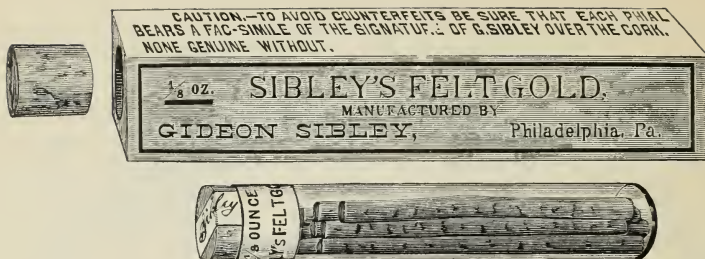
PRICE—Pink Joint Cement, per packet, \$1.25

FOR SALE BY ALL DEALERS IN DENTAL GOODS.

JAMES V. LEWIS,

General Wholesale Agent for Fletcher's Filling Materials for the United States,

15 Court St., BUFFALO, N. Y.



GOLD · FILLING · MADE · EASY

BY USING

# SIBLEY'S FELT GOLD

After a long series of experiments, I am now able to offer to the profession an entirely new form of gold for Filling Teeth, which enables the operator to work more rapidly, with greater ease, and produce better results than with any other form of gold.

The gold is prepared in strips of convenient thickness, that may be cut with sharp scissors or a knife into pellets of any desired size. In color it **resembles frosted gold**. Is absolutely pure, thoroughly cohesive and homogeneous and readily spreads; conforming to the walls of the cavity, **making a perfectly tight filling**.

Unless the gold is exposed to moisture annealing is unnecessary.

Full directions for use accompany each package.

That the profession may have an opportunity to test this gold, without buying the usual minimum package, for a short time I will put up packages containing **1-40** of an ounce; price, \$1.00.

## PRICES OF GOLD AS FOLLOWS:

1/8 ounce, \$4.50.      1/2 ounce, \$17.50.      1 ounce, \$34.00.

**CAUTION.**—See that a fac-simile of my signature is over the cork of each phial; none genuine without.

**CASH MUST ACCOMPANY ALL ORDERS FOR GOLD.**

## NEEDLE FOIL CARRIER.

(PATENT APPLIED FOR.)

The cut in the margin represents the full size of this useful instrument.

It consists of a fine needle point, controlled by a spring with sufficient tension to hold it extended while picking up the gold and carrying it to the cavity. By pressure the gold is then forced into position when the spring allows the needle to recede and free itself, leaving the gold in place. This Carrier was especially designed for Sibley's Felt Gold, but will be found to surpass anything heretofore used for this purpose with any form of gold. Price, \$3.00.

## GIDEON SIBLEY,

13th & Filbert Sts., PHILADELPHIA, Pa

FOR SALE BY THE BUFFALO DENTAL MANUFACTURING COMPANY.

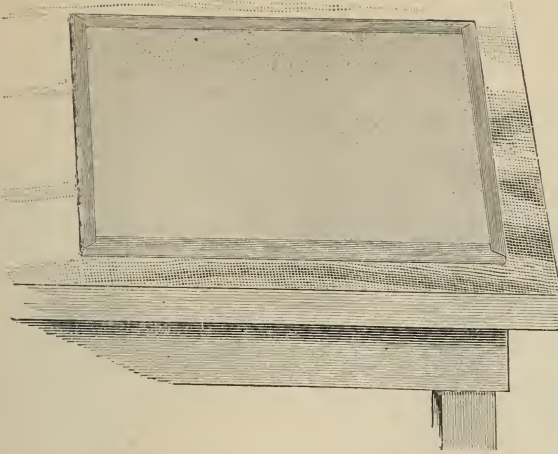




## ASBESTOS PADS.

Suggested by Dr. H. H. Boswell. For protecting the table while soldering.

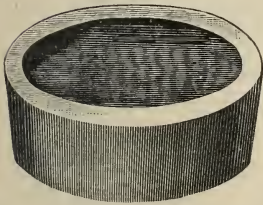
These are made from Asbestos board, about one-fourth of an inch thick, and edged with iron. They are incombustible, and excellent non-conductors of heat. The advantages to be derived by their use during blow-pipe work are too obvious to need further explanation.



### PRICES.

No. 1, Asbestos Pad,	6½ in. x 10 in. x ¼ in. thick,	each	\$0.50
No. 2, “ “	10 in. x 13 in. x ¼ in. “	“	.85
No. 3, “ “	13 in. x 20 in. x ¼ in. “	“	1.50

## MOULDED CARBON BLOCKS.



For supporting work under the blow-pipe. Cleanly, and perfect non-conductors. These are circular, hollow on each face, and four inches diameter.

### PRICE.

Moulded Carbon Blocks, . . . . . each 25 cents.

## MOULDED CARBON CYLINDERS.

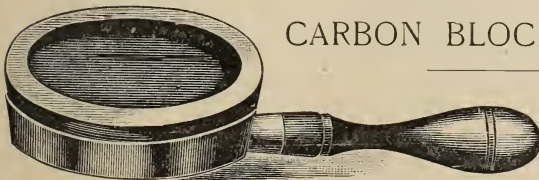
For blow-pipe analysis, made of the same composition as the Carbon Blocks. More cleanly than charcoal; the cupped ends being admirably adapted for soldering small articles, such as gold crowns. Size, 1½x3 inches.

### PRICES.

Carbon Cylinders, . . . . . each 15 cents.  
Fire Clay Cylinders, similar to above in size and form, . . . . . 15 cents.



## CARBON BLOCK HOLDER.



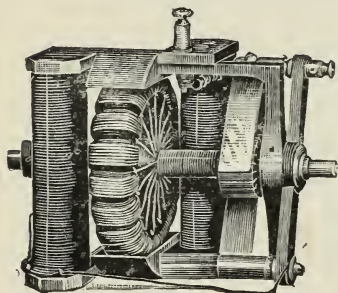
A very convenient device for holding Carbon Soldering blocks.

PRICES—Carbon Block Holder, . 25 cts. Carbon Block and Holder, . 50 cts.

# ELECTRIC MOTOR AND BATTERY

FOR THE  
DENTAL ENGINE.

PATENTED OCTOBER 12, 1886.

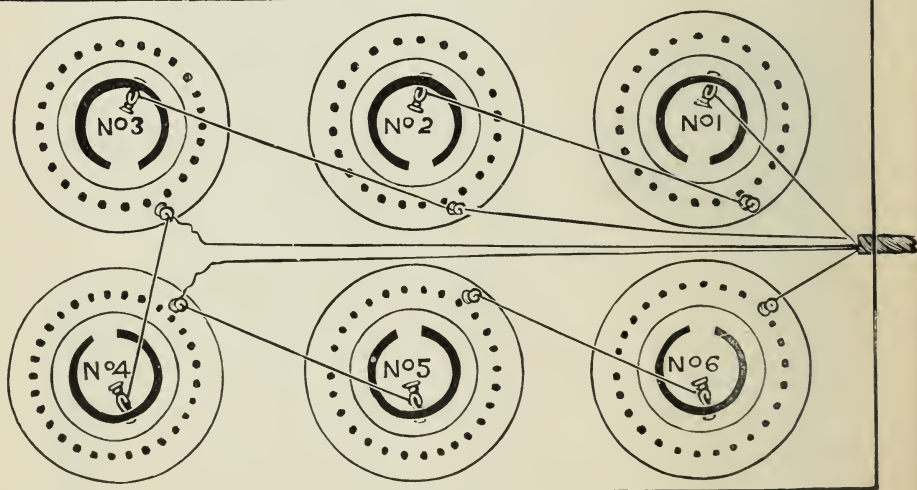


MOTOR.

By a special arrangement with the manufacturer we now offer the Detroit Motor Company's Battery and Motor, in the belief that they will meet the requirements of operators who prefer to run their engines by other than foot power.

The advantages claimed for the motor are: It is very light, weighing only three and one-half pounds; it is very strongly and substantially made; it will supply any amount of power required in operative dentistry; it will run backward as well as forward; it is instantly reversible; it is easily started; it has no dead centers.

The Battery, which consists of six cylindrical cells, each six inches in diameter by eight inches deep (inside measurements), placed in a neat box, requires but little attention. Except when necessary to change the fluids, it need not be touched. The cost per hour for actual work is very little, and there is practically no consumption of material when the Battery is at rest.



BATTERY.

The Battery is run by two fluids, easily distinguished by their colors. To charge the Battery, three and one-half gallons of the red fluid, for the cells, and one gallon of the white, for the porous cups, are required. The fluid in the porous cups should be changed after say seventy-five to one hundred hours of work; while that in the cells will bear from three to four hundred hours' actual service before becoming exhausted. Hence, four gallons of the white fluid will be used before the red fluid (three and one-half gallons) needs renewal.

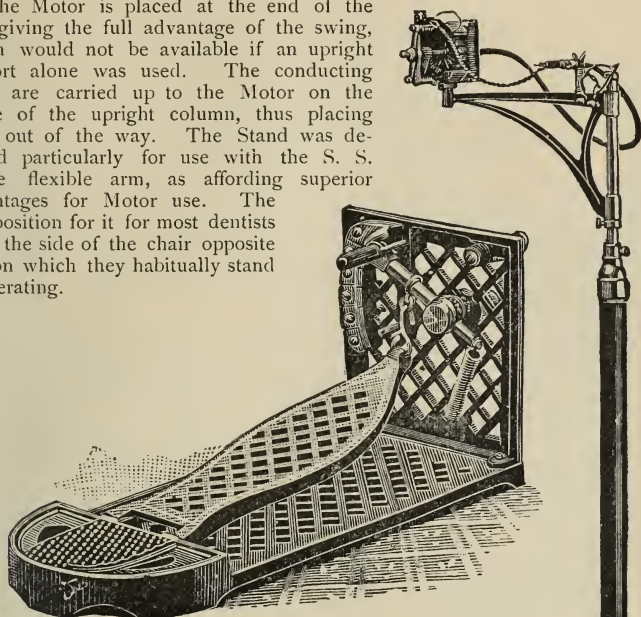
A Motor Stand and a Switch-Board, by the aid of which the operator has full control of the Motor and Battery, accompany them and are included in the price.

**THE S. S. WHITE DENTAL MFG. CO.**

PHILADELPHIA, NEW YORK, BOSTON, CHICAGO, BROOKLYN.

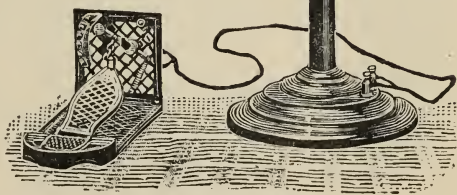
The Stand for carrying the Motor was devised with special reference to the convenience of dental practitioners. With it the operator controls the position of the Motor when in use. It is solid and easily adjustable, with an arm which can be raised or lowered or swung around at pleasure.

The Motor is placed at the end of the arm, giving the full advantage of the swing, which would not be available if an upright support alone was used. The conducting wires are carried up to the Motor on the inside of the upright column, thus placing them out of the way. The Stand was designed particularly for use with the S. S. White flexible arm, as affording superior advantages for Motor use. The best position for it for most dentists is on the side of the chair opposite that on which they habitually stand in operating.



#### SWITCH-BOARD.

The Switch-Board, by which the speed of the Motor is controlled, is best placed handy to the foot of the operator, as the Switch is worked by a pedal. By a slight pressure of the foot, two, three, four, or six cells can be brought into service, giving the Motor any desired speed. Full illustrated directions for setting up the Battery, and making the fluids supplied with each Battery.



#### MOTOR STAND.

It is our opinion that the Dental Outfit of the Detroit Motor Company is the best offered to the profession, and we have confidence in its efficiency.

#### PRICES.

Dental Motor, Battery, Stand, Switch-Board, and four yards of Cable,  
Hand-piece, Sleeve, and Cable, as per illustration, . . . . . \$89.00

#### PARTS SEPARATELY.

Motor, . . . . .	\$25.00	Hand-piece, . . . . .	\$10.00
Motor Stand, . . . . .	15.00	Cable, . . . . .	1.50
Battery, . . . . .	25.00	Sleeve, . . . . .	2.50
Switch-Board, . . . . .	10.00		

No Charge for Boxing.

Red Fluid, per gallon, . . . . \$0.60 | White Fluid, per gallon, . . . \$0.10  
Carboys or Jugs Extra.

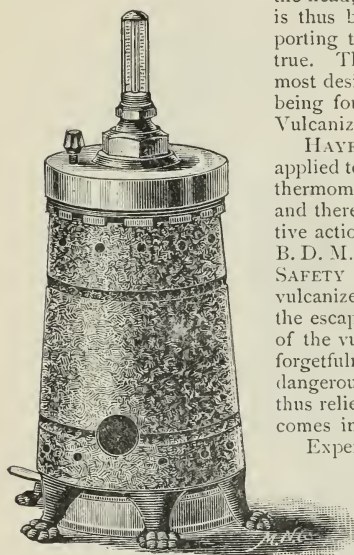
**THE S. S. WHITE DENTAL MFG. CO.**

PHILADELPHIA, NEW YORK, BOSTON, CHICAGO, BROOKLYN.



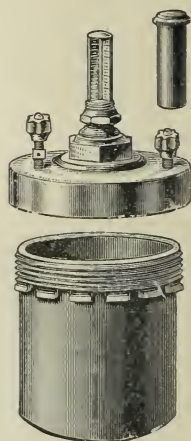
# THE WHITNEY VULCANIZER.

THE WHITNEY VULCANIZER was invented by the late Dr. B. T. Whitney more than twenty-five years ago. It consists of a copper pot, four inches in diameter, on which a brass head is screwed; a steam-tight joint being made by means of a rubber-packing in the head, which bears upon the edge of the pot. The pressure is thus brought evenly upon the parts, the screw thread supporting the pot and preventing it from being drawn out of true. This simple screw-fastening has been found to be the most desirable for dental vulcanizers, the best proof of its merits being found in the large and continued sale of the Whitney Vulcanizer.



HAYES' PATENT MERCURY BATH is applied to this vulcanizer, the bulb of the thermometer being immersed therein and thereby protected from the destructive action of the steam upon it. The B. D. M. Co.'s SAFETY APPARATUS and SAFETY DISK is also applied to this vulcanizer. This gives way and allows the escape of steam, if the temperature of the vulcanizer should be allowed, by forgetfulness or oversight, to rise to a dangerous extent. The pressure being thus relieved, a disastrous explosion becomes impossible.

Experiments have shown a variation of as much as twenty degrees in the temperature as indicated by the thermometer, depending upon the presence or absence of air in the vulcanizer: the mixture of air



and steam not allowing the heat to pass freely through it to the thermometer. A BLOW-OFF VALVE has therefore been added, by means of which the air can be expelled from the vulcanizer when it is heated, and this source of irregularity in the indications of the thermometer removed.

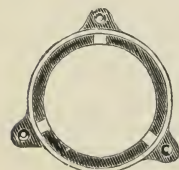


NO. 3, WHITNEY STRAIGHT WRENCH.

The bed-plate is fixed to the bench, in which a hole is cut for the reception of the vulcanizer pot. These are furnished with the vulcanizer instead of the round and straight wrenches,

Nos. 3 and 8, without any advance in price. If a hole in the bench is not practicable, the Raised Bed-plate, No. 16, which is illustrated on a succeeding page under the head of "Vulcanizer Wrenches," will be furnished at an advance in price of 75 cents.

The heat is supplied by either gas, alcohol or kerosene. Full descriptions and cuts of the different forms of heating apparatus will be found on another page. For kerosene, a special pattern of stove is used, which is supplied at the same price as gas or alcohol heating apparatus. It has a four-inch wick and will be found an efficient heater, much preferable to those heretofore used. This stove will always be



NO. 9, BED-PLATE



NO. 8, WHITNEY ROUND WRENCH.



NO. 10, BED-PLATE WRENCH.



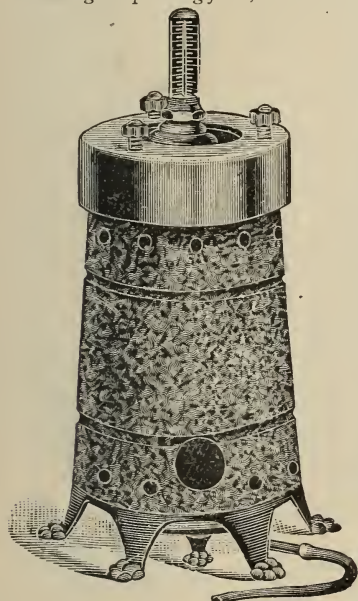
furnished with this vulcanizer, unless other heating apparatus is specified. The Union Stove, if ordered, will be furnished at an advance from the prices given below, of 50 cents for the No. 1, or \$1.00 for the No. 2 stove.

#### PRICES.

No. 1 Vulcanizer, for one flask, Gas, Alcohol or Kerosene, . . . . .	\$12.00
No. 2 Vulcanizer, for two flasks, Gas, Alcohol or Kerosene, . . . . .	14.00
No. 3 Vulcanizer, for three flasks, Gas, Alcohol or Kerosene, . . . . .	16.00

## THE HAYES VULCANIZER.

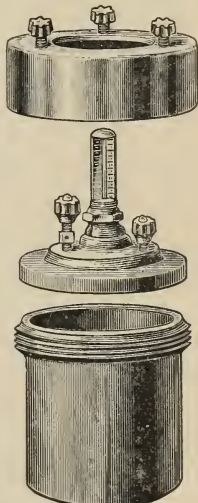
THE HAYES COPPER BOILER consists of a copper pot four inches in diameter, a cover containing the packing joint, and a collar, which screws upon a threaded ring which encircles the pot, and bears upon the cover to tighten the joint by means of three set-screws, which are plainly shown in the engraving. This fastening has proved to be the most substantial of any, and can be recommended as *absolutely steam-tight*.



THE IRON CLAD BOILER is made precisely like the Copper Boiler above described, excepting that the copper pot is covered by a shell of malleable iron strong enough to withstand many times the pressure of steam used in vulcanizing. It may, therefore, be safely used, notwithstanding the weakening of the copper by corrosion. It is only made of 4 inches diameter, and for one, two, or three flasks.

The thermometer bulb is immersed in HAYES' PATENT MERCURY BATH, by which it is perfectly protected from the corrosive action of the steam.

The B. D. M. CO.'s SAFETY APPARATUS and a BLOW-OFF VALVE form part of the equipment of the Hayes Vulcanizers.



The SAFETY APPARATUS contains a thin copper disk, which will give way if the steam pressure is allowed to rise very far above the vulcanizing point. The BLOW-OFF VALVE should be opened, and the air expelled from the vulcanizer while it is heating. Experiments have demonstrated the *absolute necessity* of taking this precaution, to insure uniform indications from the thermometer.



NO. 17, HAYES WRENCH

The Hayes Wrench, No. 17, here illustrated, answers for closing the Hayes Vulcanizer and also for the flasks.

Either Gas, Alcohol or Kerosene heating apparatus is furnished as required, at the same prices given below. They are illustrated on another page. A SPECIAL PATTERN OF KEROSENE STOVE is now furnished with our vulcanizers, without the advance in price heretofore made in furnishing the Union Stove. It will always be furnished with these vulcanizers unless other heating apparatus is specified. The Union Stove, if ordered, will be extra, viz: No. 1, 50 cents; No. 2, with two wicks, \$1.00.

#### PRICES.

No. 1, Copper, Gas, Alcohol or Kerosene, . . . . .	\$12.00
No. 2, Copper, Gas, Alcohol or Kerosene, . . . . .	14.00
No. 3, Copper, Gas, Alcohol or Kerosene, . . . . .	16.00
No. 1, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	13.00
No. 2, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	15.00
No. 3, Iron Clad, Gas, Alcohol or Kerosene, . . . . .	17.00

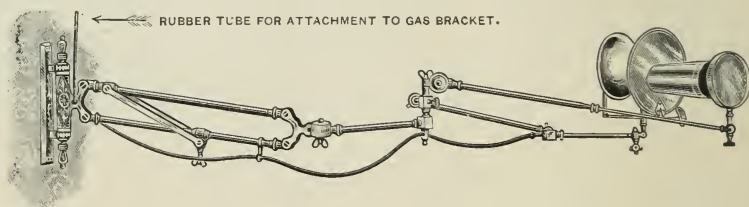
# THE LEWIS COMBINED ILLUMINATING • AND • MAGNIFYING • APPARATUS •

PATENTED SEPTEMBER 27, 1887.

This apparatus is capable of being used for a number of purposes in dental operations: First. It is an adjustable support for a magnifying glass, relieving the dentist from the necessity of holding the glass to inspect his work, thus leaving both his hands free. Second. When not used for magnifying, the lens can be used to concentrate natural light upon the tooth to be operated on. Third. By the combined use of gaslight, reflector, shield, tube and lens, any dental operation can be carried on after the natural light has proved insufficient, or in the evening; in fact those who have used it, often prefer to darken their operating rooms and work entirely by the illuminator, pronouncing the light much superior to diffused daylight. Fourth. The tube and shield being removed, it affords a very convenient means for illumination during the evening for extraction.

The entire apparatus is suspended from the ceiling by means of a ball and socket joint—over the left arm of the chair and about its centre—which is so constructed that the ball is clamped sufficiently to retain the depending tube in any position. Sliding telescopically in the tube is a rod carrying arms which support the illuminating and magnifying devices, which are adjusted by the various joints and sliding tubes thereon, enabling the operator to direct the light to any part of the mouth.

When not in use the whole lower part is folded up, so that the arms are parallel with the depending tube, and the whole may be pushed up out of the way. This apparatus is of inestimable value during cloudy days. Being suspended from the ceiling, the apparatus is entirely out of the way of the dentist; there is not the tremor or unsteadiness which would be manifested if it were applied to the chair. The joints are so constructed that they are self-sustaining, retaining the apparatus in any position in which it may be placed. When ordering, state height of ceiling.

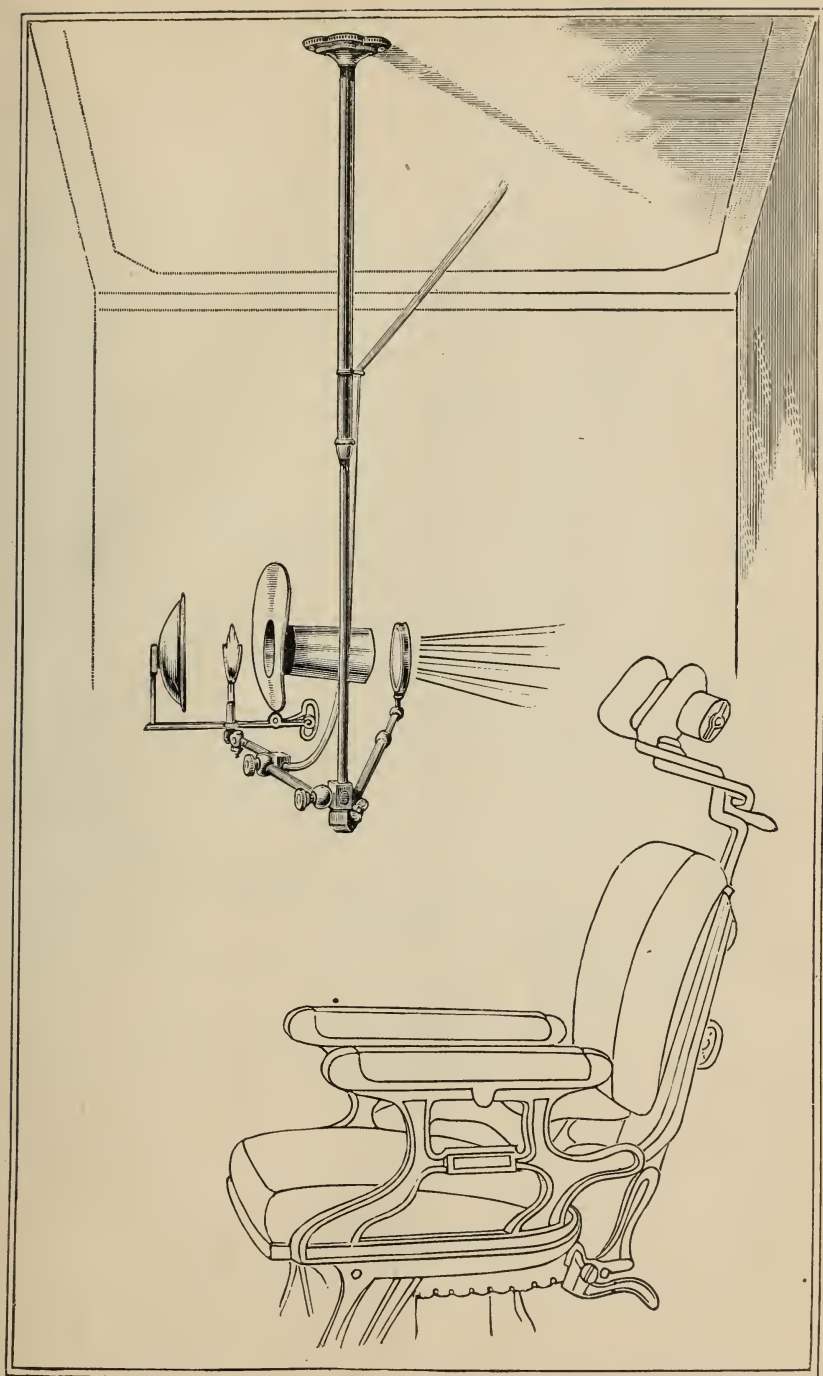


FOR ATTACHMENT TO SIDE WALL OF OPERATING ROOM.

Though the Lewis Illuminator is, in most instances, preferably attached to the ceiling, there are cases when it can be attached to the side wall with advantage. For this purpose the modification shown in the accompanying illustration has been devised. The wall support resembles the ordinary parallel motion dental bracket, swivelling to give lateral movement, while vertical adjustment is secured by the parallel bars. The diagonal brace and thumb-screw, which are plainly shown in the cut, hold it firmly at any desired height. Beyond the parallel bars, the arrangement of parts is precisely the same as with the ceiling pattern. The wall pattern of the illuminator can be used when there is a space of two feet or less between the chair and the wall to which the illuminator is to be attached. Its proper position is about in line with the front of the chair-arms, the distance from the bottom of the wall-plate to the floor being about four feet. It is polished and nicked throughout.

## PRICES.

Lewis Illuminating and Magnifying Apparatus, Ceiling Attachment, . . .	\$25.00
Lewis Illuminating and Magnifying Apparatus, Side Wall Attachment, . . .	30.00



THE LEWIS ILLUMINATING AND MAGNIFYING APPARATUS.

Reduction . . . . .

— — —  
PHILADELPHIA, June 9th, 1888.  
REDUCTION.  
On and after this date, retail price for Gas  
will be \$2.00 per 100 gallons.  
H. D. JUSTI,  
1301 & 1303 Arch Street,  
PHILADELPHIA, PA.  
BRANCH,  
66 EAST MADISON STREET,  
CHICAGO, ILL.

. . . . . Reduction



# REDUCED · PRICE · LIST.

TEETH.	In Lots of \$100.00	In Lots of \$50.00	In Lots of \$25.00	In Lots of \$15.00	Less than \$15.00
Justi Superior and Star Gum Sections...	12c.	12½c.	13c.	14c.	15c.
Justi Plain and New Celluloids .....	8c.	8½c.	9c.	9½c.	10c.

## GREAT REDUCTION IN GAS.

Surgeon Case, complete, with 7-gal. Bag.....	\$33.00.	With 4½-gal. Bag.....	\$	31.75
Universal Tripod, with 4½-gal. Gas Bag and 100-gal. Cylinder, filled.....				26.75
Universal Tripod, with 7-gal. Gas Bag and 100-gal. Cylinder, filled .....				28.00
Stand, all Japanned, N. P. Cap, 4½-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				28.75
Stand, all Japanned, N. P. Cap, 7-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				30.00
Stand, Japanned Base, N. P. Cap and Casing, 4½-gal. Gas Bag, 100-gal. Cylinder, filled, etc., ..				30.75
Stand, Japanned Base, N. P. Cap and Casing, 7-gal. Gas Bag, 100-gal. Cylinder, filled, etc., .....				32.00
500-gallon Cylinder .....	\$15.00	100-gallon Cylinder .....		6.00
Refilling 500-gal. Cylinders .....			per gal.	<b>.02</b>
Refilling 100-gal. Cylinders .....				<b>2.00</b>
Justi Inhaler, Nickel-plated .....	\$8.00	With Flexible Rubber Hood .....		8.50
4½-gallon Bag .....	2.25	7-gallon Bag .....		3.50
Metallic Connections for Gas Bags.....			per set	.50
Morocco Case, with Fittings complete.....				10.00
Union, Nickel-plated, with Connecting Tube,.....	\$1.00	N. P. Wrench.....		.50
Stop Cock, Nickel-plated.....	1.00	Wheel Key, Japanned .....		.25
Inhaling Tubing, Worsted Covering.....			per ft.	.50
<b>Justi New Universal Tripod, to hold Cylinders of all sizes.....</b>				<b>5.00</b>
<b>Justi New Universal Cyl. Stand, to hold Cyl. all sizes, N. P. \$9.00, Japanned..</b>				<b>7.00</b>
<b>Justi Flexible Rubber Hood.....</b>	<b>\$1.00</b>	<b>With Metal Connection.....</b>		<b>2.00</b>
Dr. Hurd's Union and Extension.....	5.00	With Chloroform Mixer.....		7.00

Dr. Hurd's Chloroform Mixer will be included with Outfits for an additional price of \$6.00.

Justi Extra Elastic Rubber, in ¼s, ½s and 1s.....		per lb.	2.75
Justi Superior No. 1 Rubber, light, medium or black.....		"	2.25
Doherty, Weighted Rubber, for lower sets .....		"	4.00
Justi Acme Cement .....	per ½ oz. .... \$1.50	Per oz.....	2.50
Justi Superior Insoluble Cement (four colors to the oz.) .....		per oz.	3.00
Justi Superior Insoluble Cement (two colors to the 1-2 oz.) .....		per ½ oz.	1.50
Justi Star Gold Foil.....	per ½ oz. .... \$15.00	In ½ and ¼ ounces.....	per oz. 32.00
Justi Star Tin Foil.....		per book	.40
<b>Justi Superior Gold and Platina Alloy .....</b>	<b>per oz. \$3.00 ; 2 oz. \$5.50 ; 4 oz. 10.00</b>		
Amalgams, King's, Caulk's, or Sterling .....		per oz.	3.00
Stopping or Pellets, Caulk's .....	\$2 00	Chicago Alloy.....	" 4.00
<b>Justi Magnifique Modeling Composition .....</b>		per box	<b>1.00</b>
<b>Justi Improved Hand Socket Holder.....</b>			<b>1.50</b>
Justi Improved Socket Handles for Excavators and Pluggers .....		per doz.	3.00
<b>Justi Socket Handles for Engine Points .....</b>		per doz.	<b>3.50</b>
Justi Socket Plier, Nickel-plated .....			.75
Justi Articulator, No. 0.....	\$0.90	No. 1, Light.....	\$1.75
		No. 2, Heavy.....	2.00
Justi Articulator, No. 3, Ball and Socket Joint .....			2.50
Justi Rubber Dam Weight, Nickel-plated.....			.50
Justi Star Rubber Dam Punch.....	\$1.50	Triplex Punch.....	1.00
<b>Universal Cuspador Clamp, adapted to all Dental Chairs.....</b>			<b>3.00</b>
<b>Justi Mouth Prop and Reflector, Silver-plated, Highly polished.....</b>			<b>2.00</b>
<b>Sand and Emery Paper Disks.....</b>		per box	.25
Rubber Dam Holder, Ivory Guards.....	\$1.50	Amber or Horn Guards .....	1.00
Superior Rubber Dam, per yard, thin .....	1.00	Medium.....	\$1.50
		Heavy.....	2.00
Cuspador, No. 1, with Gold Catcher .....	4.00	No. 2, with Gold Catcher and Cap.....	1.50
Cuspador, No. 3 .....	2.00	No. 4, with Gold Catcher .....	4.00
Nickel-plated Funnel.....	2.00	Glass Funnel for Cuspador .....	.75

H. D. JUSTI, 1301 & 1303 Arch St., PHILADELPHIA.

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❧ • JUSTI • • • • •

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SUPERIOR

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GOLD • AND • PLATINA

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• • • • • ALLOY • ❧

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IN offering this Alloy to the profession, I can say that it will do all that is claimed for it. It has been largely used by first-class operators and experts who have **thoroughly tested** its **SUPERIOR QUALITIES**, and I have no hesitation in pronouncing it the **best combination of metals extant**, being carefully prepared after long tests and careful experiments; and the fineness of its grain, which makes it so **dense** after being mixed, is greatly due to the **crystallization** of the metals in the **process of its manufacture**.

Its main points are:—**SETS VERY QUICKLY** and can be **finished shortly** after its insertion; has good **EDGE-strength**, good **BRIGHT** color, and is **NON-SHRINKABLE**.

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PRICE:—1 ounce, \$3.00; 2 ounces, \$5.50; 4 ounces, \$10.00

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• • • • • H. D. JUSTI, • • • • •

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BRANCH: 69 East Madison St., CHICAGO, ILL. 1301 & 1303 Arch St., PHILADELPHIA, PA.

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This book must be returned to  
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